RIYANG™

INSPIRED BY FUSION WELDING

OPERATION AND MAINTENANCE MANUAL

V800 V1000 V1200

EN 2019

FOREWORD

Dear Customers and Partners,

Thank you very much for purchasing our products, and we are confident it will create more value to your business.

In this manual book, you will find all the information and suggestions needed to operate our V series butt fusion machine in a safe, professional and proper way. Therefore we strongly request you to read all messages in this book before the operators start using the machines.

As this machine is a professional device, and it must be limited to skilled and certificated personnel.

Now enjoy the welding journey through using Riyang welding machines.

Note: We reserve the rights to change the technical parameters without prior notice.

Sincerely

Jack Chan

RIYANG™
INSPIRED BY FUSION WELDING

INDEX

1. Technical Parameter

Riyang V series is on-site hydraulic butt fusion welding machine. It is used to butt weld pipe and fittings such as elbow, tees, wye and flange necks without any additional equipment by simply adjusting the clamps` drag bar. It is suitable for welding plastic pipe and fittings made of HDPE, PP, PVDF and other thermoplastics material.

Each person who operates the machine has to conform to the instructions of this manual.

Technical Parameters	V800	V1000	V1200
Welding Range O.D. (mm)	(400, 450)500 - 800	630 - 1000	630 - 1200
Applicable Materials	HDPE, PP, PVDF and other thermoplastics material		
Power Supply	380V, 50/60Hz, 3P		
Rated Power (kW)	16.9	22.7	28.5
Overall Machine Weight	1021Kg/2244lb	2389Kg/5256lb	3295Kg/7249lb
Machine Chassis			
Piston Area(cm^2)	44.00	38.80	50.70
Chassis Dimension (mm)	2040 x 1340 x 1340 80.3 x 52.8 x 52.8in	2500 x 1800 x 1700 98.4 x 70.8 x 67in	2760 x 1980 x 1900 108 x 77 x 74in
Weight	676Kg/1487lb	1242Kg/2732lb	2230Kg/4906lb
Hydraulic Power Unit			
Rated Power (kW)	2.2		
Working Pressure Range (Bar)	0-120	0-140	0-160
Hydraulic Oil	#46, SHELL TELLUS T46 is recommended		
Oil Tank Volume (L)	6		
Chassis Dimension (mm)	770 x 320 x 340 30.3 x 12.6 x 13.4in		
Weight	45Kg/99lb	47Kg/103lb	52Kg/114lb
Heating Plate			
Rated Power (kW)	12.5	17.5	21.5
Temperature Range	Maximum 320℃		
Dimension (mm)	1260 x 70 x 1170 49.6 x 2.8 x 46in	1500 x 100 x 1500 59 x 3.9 x 59in	1700 x 100 x 1680 67 x 3.9 x 66.1in
Weight	62Kg/136lb	148Kg/325lb	190Kg/418lb
Trimmer			
Rated Power (kW)	2.2	3.0	4.0
Chassis Dimension (mm)	1000 x 320 x 1340 39.4 x 12.6 x 52.8in	1300 x 340 x 1650 51.2 x 13.4 x 65in	1550 x 360 x 1750 61 x 14 x 68in
Weight	162Kg/356.4lb	318Kg/700lb	400Kg/880lb
Support			
Overall Dimension (mm)	790 x 840 x 920 31.1 x 33 x 36.2in	1075 x 1070 x 1224 42.3 x 42.1 x 48.2in	1216 x 1100 x 1396 47.9 x 43.3 x 55in
Weight	74Kg/162.8lb	185Kg/407lb	230Kg/506lb

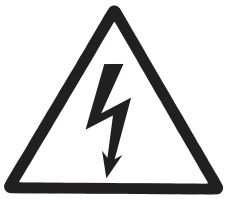
* Available as option

2. Safety Precautions

The use of butt welding machine V series is limited to skilled and certified personnel only. Any irregular operation could probably cause any injury. Attention please.

The safety precautions herein indicated must be taken into consideration all the time when operating the machine.
You should promptly replace the worn-out or damaged parts with original Riyang spare parts only.
Any sort of repair and maintenance must be conducted by authorized skilled and qualified personnel only.

2.1 Electrical Hazard



Hazard: Electric Shock
Parts involved: Hydraulic Power Unit
Heating Plate
Trimmer
Distribution Box

Make sure that the power supply correspond to the request of the machine. And all connections are done properly.

Earth the machine
Please make sure the earthed system is working properly.

⚠ **Important:**
The panel board plug must accord with the IEC 309 type with IP44 minimum protection degree.
Do not expose the machine to rain or any other liquids.
Do not expose the cables to chemical environment, mechanical strain, and keep it away from some sharp objects.
Make sure the the isolation protection device, such as safety gloves and shoes, are completely dry when machine working in wet environment.
It is forbidden to splash the machine in purpose of cleaning the machine.
Should clean the machine after use. It is forbidden to use solvents, gasoline, abrasive liquids and corrosive liquids, these could probably destroy the isolating parts.
Check insulation condition of machine periodically by qualified personnel, including earthed system, leakage switch, cables insulation.
Unplug the machine from power source immediately after use.

2.2 Cutting Hazard

Hazard: Cutting
Parts involved: Trimmer

Please pay attention to the blade when handle the trimmer by hand.
Keep a safe distance from the trimmer when it is working.

Keep in mind that safety gloves is always needed.

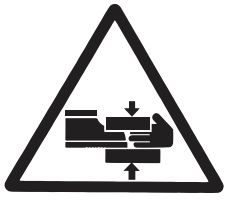
2.3 Splintering Hazard

Hazard: Splintering
Part involved: Trimmer

Keep a safe distance from the trimmer when it is working.
Remember to clean the pipe ends before trimming them, nothing remains on the trimming area.

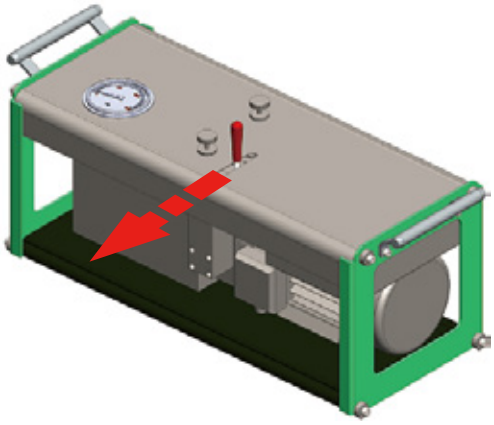
Always wear safety glasses or goggles

2.4 Crush Hazard



Hazard: Crush
Part involved: Machine Chassis

When crush happened, immediately activate the directional lever to open the carriage. (the lever must go to the direction as show below)



Make sure that you are familiar to operate the machine before welding.
Make sure that the machine is stable at all times during the welding.
Make sure that nothing stays in the welding area before close the carriage.

2.5 Scald Hazard

Hazard: Scald
Part involved: Heating Plate
Support

Keep a safe distance from the heating plate when it is working.
Do not touch the plate when it is working or still hot.
Clean the heating plate with maximum caution.
Do not touch the heating plate support when the plate is heating or just take out.

Please always wear your safety gloves.

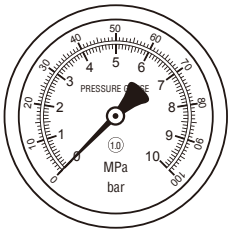
2.6 Fire Hazard

Hazard: Fire
Part Involved: Heating Plate
Support

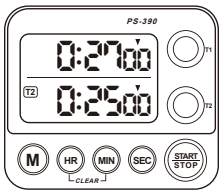
Be sure that flammable material kept away from the heating plate and support.

3. General Welding Knowledge

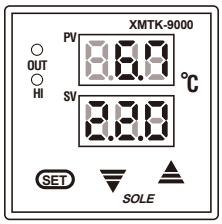
3.1 Parts you should know



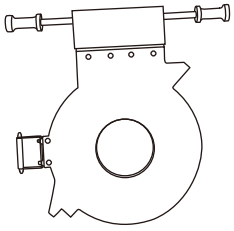
Part name: Pressure Gauge
Functionality: Show the force applied during welding
Verify the functionality before welding



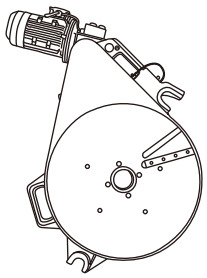
Part Name: Timer
Functionality: Set the time applied to each welding process
Verify the functionality before welding



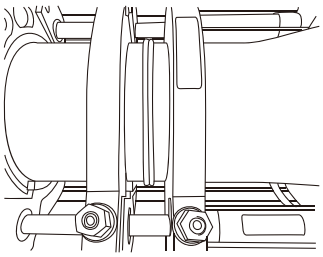
Part Name: Temperature Controller
Functionality: Set and control the temperature applied to the welding
Verify the functionality before welding



Heating plate
Check the integrity of Teflon coating.
Should verify the heating plate if could reach to the temperature which set by temperature controller.

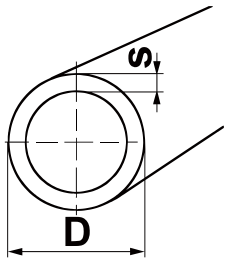


Trimmer
Before welding, be sure the trimmer works well.
Be sure the blades are sharp enough and could face the pipe end properly.

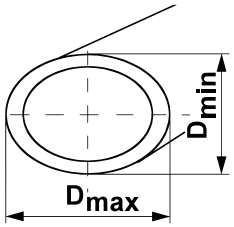


Please make a test welding.

Pipes specifications should respect the tolerance range established by the National Legislation and Regulation:

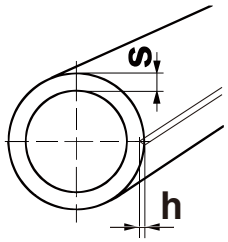


It must have same nominal outside diameter(D) and nominal thickness(S).



The oval-shaped

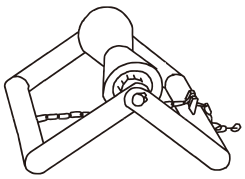
$$\frac{D_{max}-D_{min}}{D} \text{ x100}$$



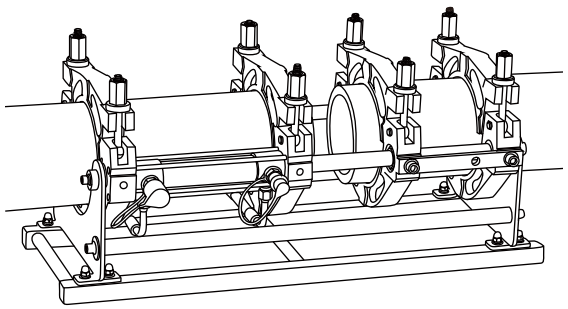
Scratches percentage(h: scratch depth)

$$\frac{h}{s} \text{ x100}$$

3.2 Welding Criteria

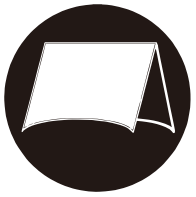


Sustain the pipes with rollers to reduce the fiction, therefore reduce the dragging pressure.



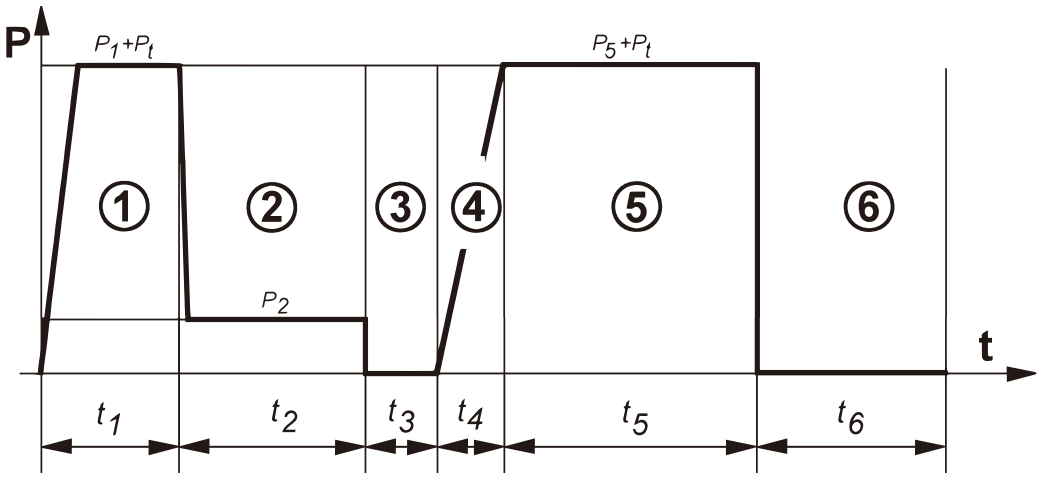
The dragging pressure must be measured with pipes/fittings clamped.

Be sure the internal and external surfaces of the pipe ends be cleaned well.



Please protect the welding in case of rain, sand wind, snow, very low or very high temperatures.

3.3 Welding Procedure



P1: Bead-up pressure

P2: Maximum soaking pressure

P5: Welding pressure

Pt: Dragging pressure (a pressure required to overcome the overall friction when machine carriage start to move with pipes/fittings fastened in the clamp. Operator read it from pressure gauge.)

t1, t2, t3, t4, t5, t6: Time requested for each phase 1, 2, 3, 4, 5, 6.

Phase 1 : Bead-up.

Approach both ends to be welded to the heating plate at the (P1+Pt) pressure, and wait until the bead has reached the expected size from the standard requested.

Phase 2: Soaking

Reduce pressure to P2 maximum value, to keep the ends in touch with the heating plate for the entire t2 time.

IMPORTANT! The ends to be welded MUST NOT detach from the heating plate while the pressure is being reduced. If that happens, the welding must absolutely be repeated.

Phase 3: Removal of heating plate.

Remove the heating plate within the maximum t3 time, without damaging the beads.

Phase 4: Reach of welding pressure.

Get both ends together while gradually increasing the pressure up to (P5+Pt) value, within t4 time.

Phase 5: Welding.

Keep both ends together at the (P5+Pt) pressure for the entire t5 time.

Phase 6: Cooling.

The joint must not be removed or suffer any sort of mechanical strain for the entire t6 time.
Do not use water or compressed air to rush cooling. Protect the joint from very low or very high temperature, rain.

You are requested to follow the welding procedure strictly to make the right joints without any intention to reduce the welding time by mechanical strain.

3.4 Welding joint overview and analysis

Qualified joint by visual checking.

Narrow and fall bead. Too high pressure while welding.

Too small bead. Pressure is not enough while welding.

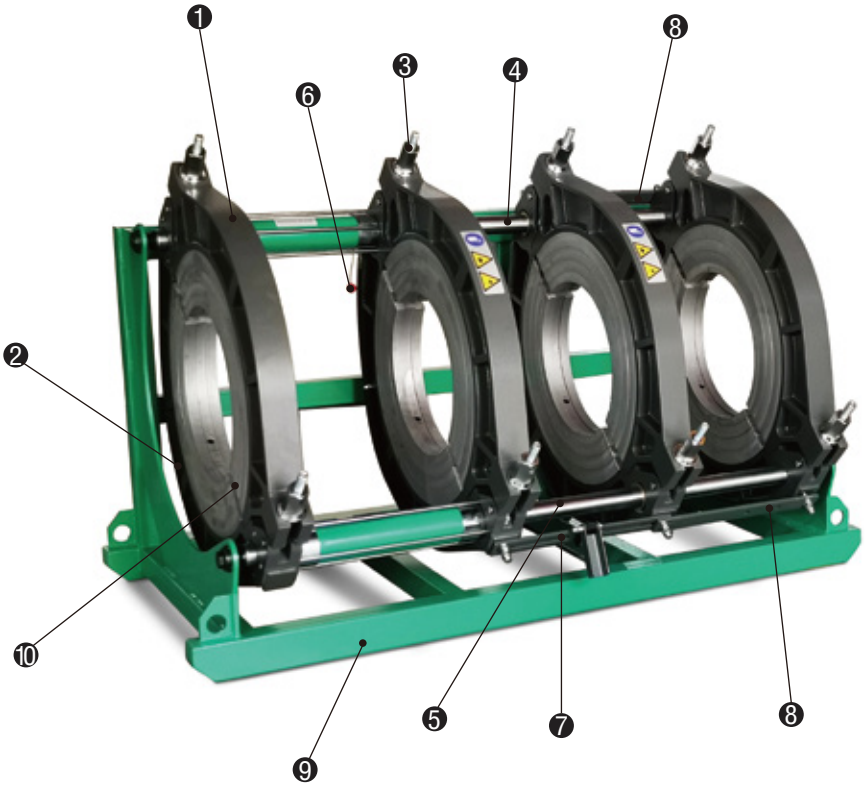
A ditch in the joint. Temperature is not reached or change-over time is too long before welding.

Misalignment. Welding under the condition that the misalignment exceeds 10% of pipe wall thickness while align the two ends.

4. Components Description

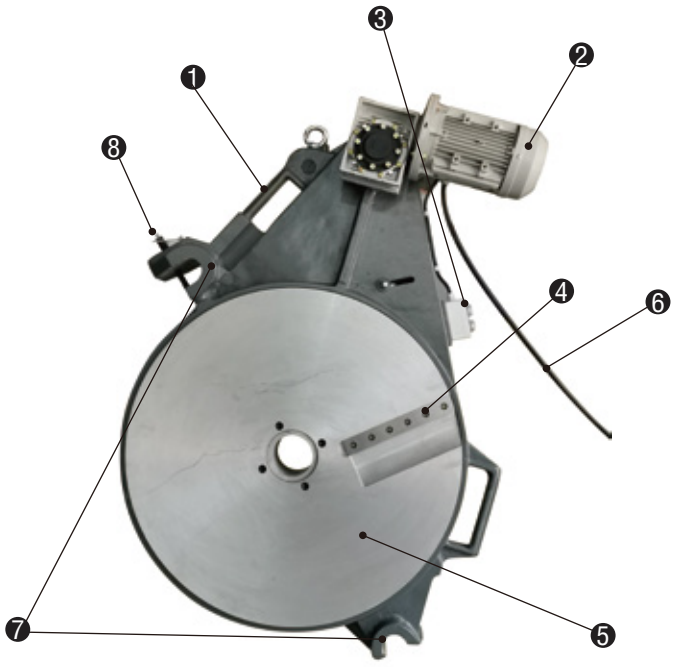
4.1 Machine Carriage

❶ Upper jaw
❷ Bottom jaw
❸ Fasten screws
❹ Upper piston rod
❺ Lower piston rod
❻ Quick coupling
❼ Heating plate detach device
❽ Dragging bars
❾ Basic support
❿ Reducting inserts



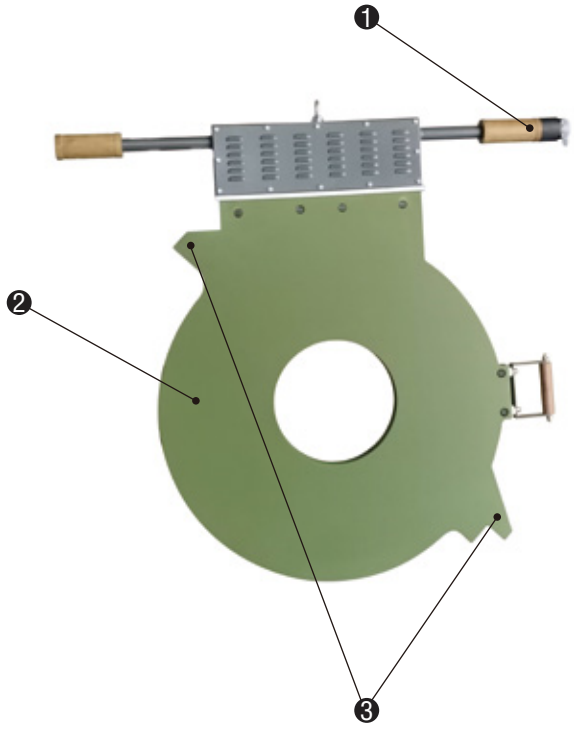
4.2 Trimmer

❶ Handgrip
❷ Motor
❸ Start/Stop button
❹ Blade
❺ Facer disk
❻ Power supply cable
❼ Support
❽ Blocking Bolt



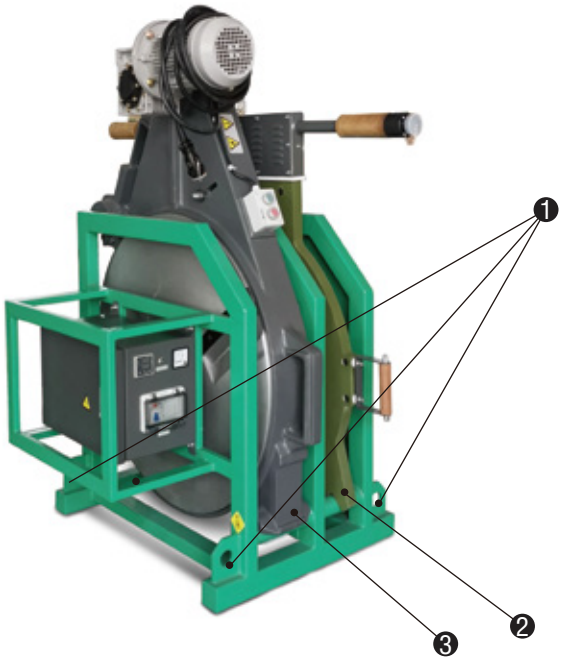
4.3 Heating plate

❶ Power supply connection
❷ Plate
❸ Piston rod support



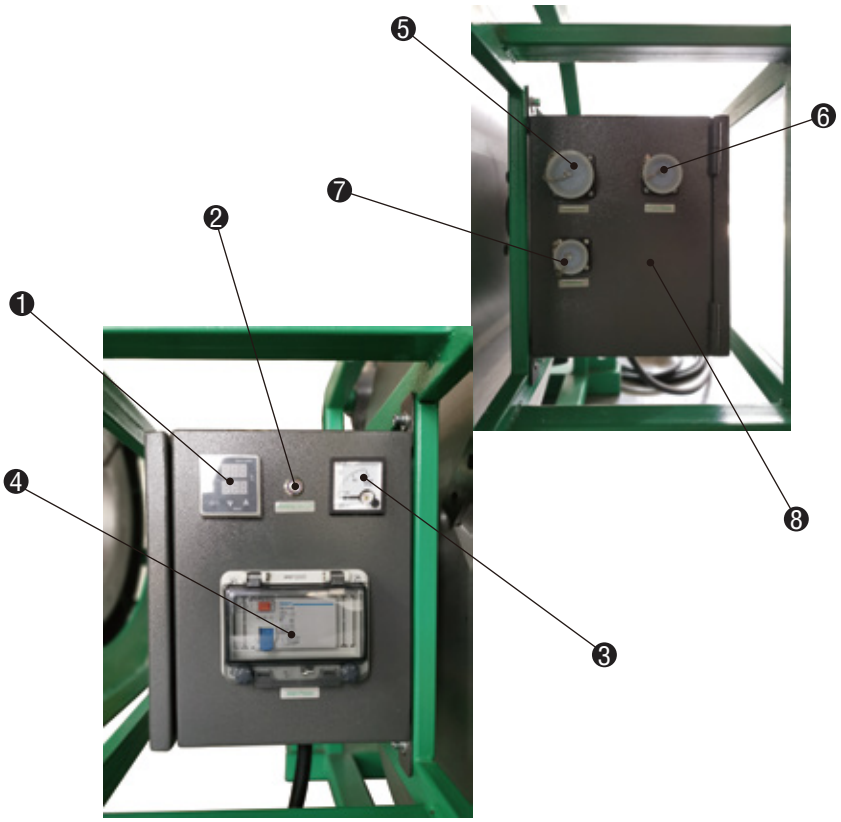
4.4 Support for trimmer and heating plate

❶ Lifting point
❷ Heater support rod
❸ Trimmer support rod



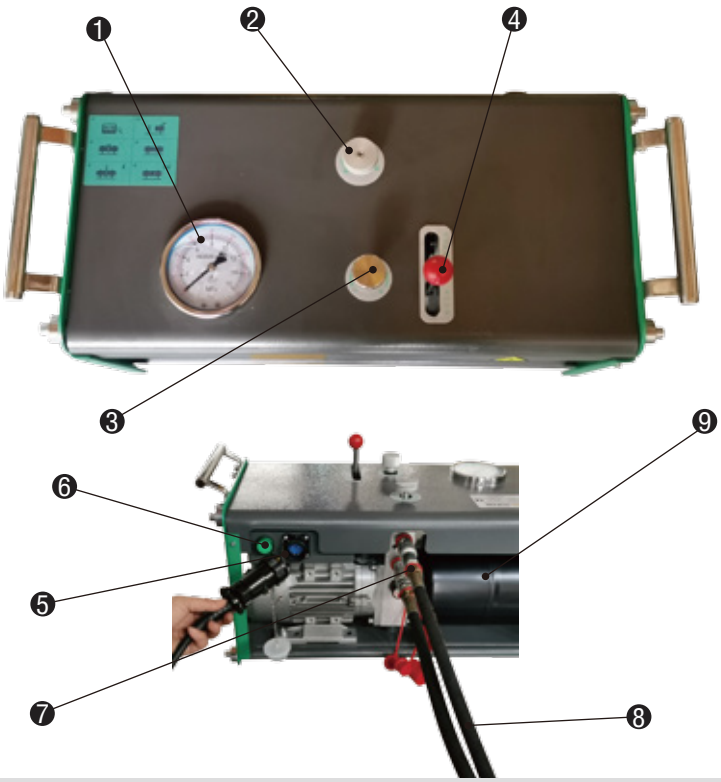
4.5 Distribution Box

❶ Temperature controller
❷ Temperature on/off button
❸ Voltage display
❹ Circuit breaker
❺ Heating plate connection
❻ Power station connection
❼ Trimmer connection
❽ Hoist or data logger (On request)



4.6 Hydraulic Power Unit

❶ Pressure gauge
❷ Pressure relief valve
❸ Pressure regulated valve
❹ Direction lever
❺ Main power connection
❻ Power indicator
❼ Quick coupling
❽ Hydraulic oil hoses
❾ Oil tank filler



4.7 Timer

❶ T1 mode key
❷ T2 mode key
❸ Memory time key
❹ Hour adjustment key
❺ Minutes adjustment key
❻ Second adjustment key
❼ Start/stop key

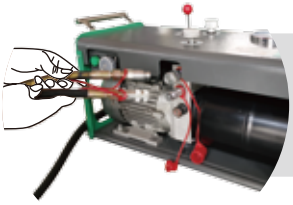
4.8 Standard Tool Box

❶ Tool box
❷ Inserts fixing screws
❸ Wrench
❹ Screwdriver
❺ Allen driver
❻ Timer and batteries
❼ Blade (2pcs)
❽ Oil suction

5. Operating Instruction

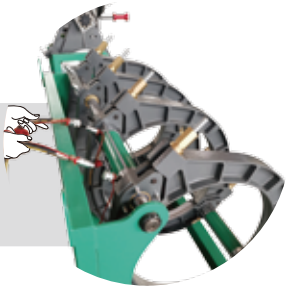
Again, please make sure below things are in position before welding:
Only qualified personnel is allowed to operate the machine.
The whole unit should be placed on the stable ground without water and fire, keep inflammable material out of heating plate reach.
The machine is in good condition, electricity cable and hydraulic hoses are not worn and broken.
The power supply should comply with that the machine requires.

5.1 Hydraulic Connections

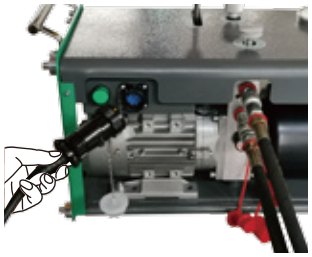


Connect the hydraulic hoses to hydraulic power unit.

Connect the hydraulic hoses to machine carriage.

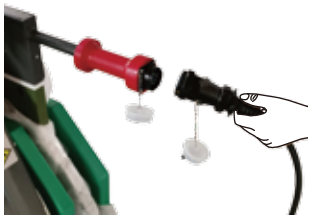


5.2 Electrical Connections



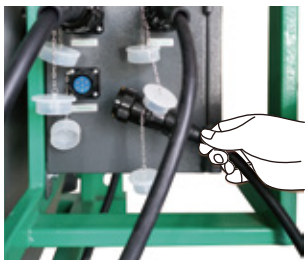
1. Connect power station cable to hydraulic station. It is connected properly only when sound “Click” made.

2. Connect power station cable to distribution box. It is connected properly only when sound “Click” made.



3. Connect heating plate cable to heating plate. It is connected properly only when sound “Click” made.

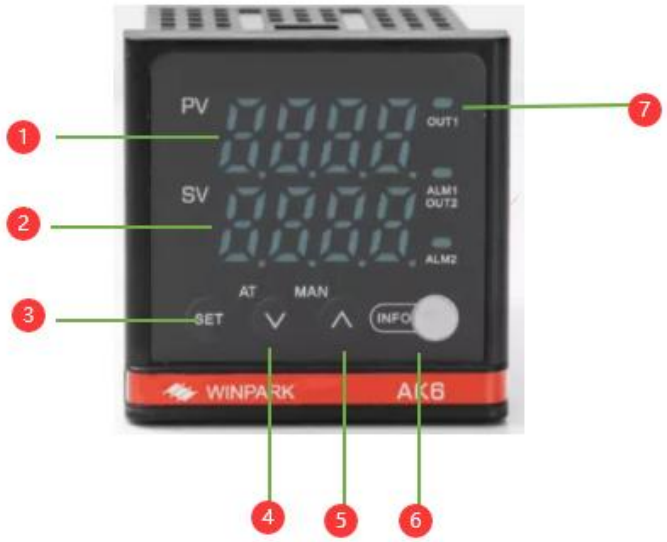
4. Connect heating plate cable to distribution box. It is connected properly only when sound “Click” made.



5. Connect the trimmer cable to distribution box. It is connected properly only when sound “Click” made.

6.At last, please plug into the main power source.

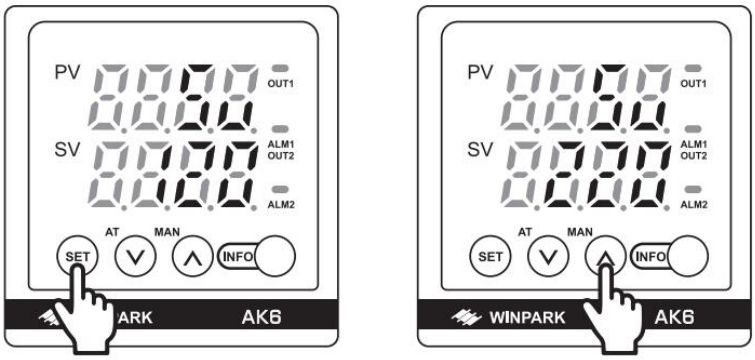
5.4 Temperature Set



① (PV) display temperature
② (SV) display set temperature
③ (SET) function key
④ Value minus/parameter sift
⑤ Value plus/parameter sift
⑥ Enter to confirm information
⑦ Heating indicator

Activate the temperature controller by pressing the “On/Off” button. Then the button light will turn to be “blue”, and display shows up the values of current temperature and temperature set. The heater is thermoregulating now.

Press “**SET**” until “**SV**” blinks, increase and decrease the temperature value by pressing button “ ⋁ ” or “ ⋀ ” accordingly. After setting, please press “**SET**” to confirm the value and it will reflect to the temperature controller.



5.5 How To Rectify The Temperature Deviation

Due to the different environmental temperature, the actual temperature shown and temperature set may need a deviation rectification, please follow below ways:

<Example: after contact thermometer detecting the heater, the actual temperature is less 4℃ than temperature set>

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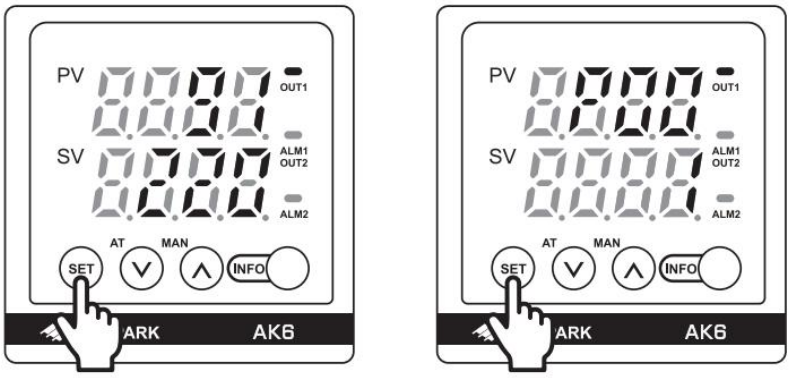
① Keep “**SET**” pressed for approximately 3 seconds until the “**PV**” shows “**P00**”, and press “**SET**” again, “**SV**” will blink



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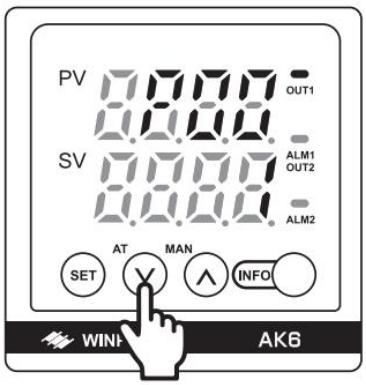
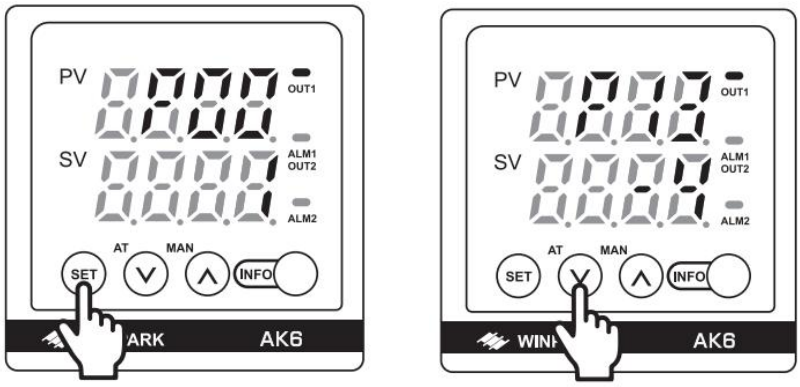
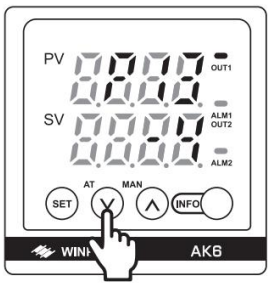
②Press “∨” or “∧” until the “**SV**” value shows “**1**”



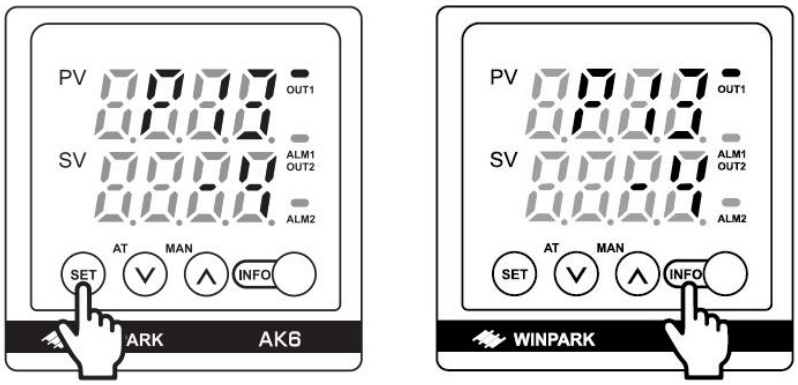
③ Press “**SET**” and “**PV**” will blink. Press “∨” or “∧” until the “**PV**” value shows “**P13**”



④ Press “**SET**” and “**SV**” will blink. Then set the value “**-4**” (if the actual temperature on heater surface is 4℃ higher than temperature set, set the value to be “**4**”)



⑤ After setting, please press “**SET**” and then “**INFO**” to confirm. The value is memorized and the temperature controller rectifying automatically.

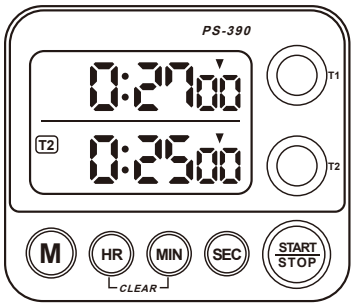


Error Message

If one of the following messages appears, please ask your electrical technician to diagnose it and work out the solution. Please contact local authorized service center or contact Riyang company directly if problem still exist.

Display	Code Define	Trouble Shooting	Remark
Err 0	No error	None	
Err 1	Parameter invalid	Controller malfunction, please contact supplier	
Err 2	RTD is disconnected	Check if RTD is connected well or not	
Err 3	Abnormal cold end temperature	Controller malfunction, please contact supplier	“PV” blinks
Err 4	Exceed upper limit of temperature range	Check if the thermocouple is connected or not	
Err 5	Exceed lower limit of temperature range	Check if the thermocouple is connected or not	

5.5 Set The Time



Countdown

Choose the time mode by pressing "**T1**" and "**T2**", which we could refer to the "**T2**" and "**T5**" time applied during the welding procedure.
Press the keys "**HR**", "**MIN**" or "**SEC**" to set time in terms of hour, minutes or second. Keeping the key pressed to set the time quickly. Press the key "**START/STOP**" to start countdown. Countdown could be paused and re-started at anytime by press the key "**START/STOP**".
Press the keys "**HR**"and "**MIN**" to clear the time.

When countdown is over

When the timer counts down to zero, the count-up symbol "▲" blinks, the timer will count up from zero, and it will alarm for a minute (if the alarm is turned on by fluctuation switch), and accordingly the indicating lamp will blink for a minute.
Press the key "**START/STOP**" to recall the countdown time previously set.

Set the Memory Time

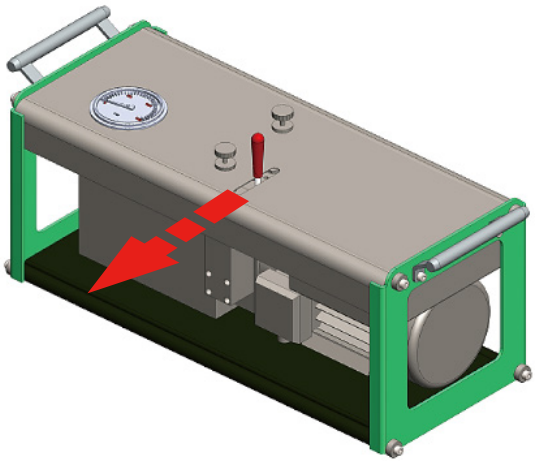
You can apply the memory time to welding cycles. Set as following:
When the time is paused, keep the key "**M**" pressed until the value blinks. Then you press the keys "**HR**", "**MIN**" or "**SEC**" to set time in terms of hour, minutes or second.
Press the key "**M**" to confirm the time setting.
When timer is paused, you could recall the memory time by pressing the key "**M**".

5.6 Hydraulic Oil Checking

You should re-fill the oil tank if you took the machine by air flight. The oil tank is always empty out before delivery to comply with International Air Regulation.
And please check if the hydraulic oil is sufficient or not by oil probe. It should be 2/3 of the tank volume.

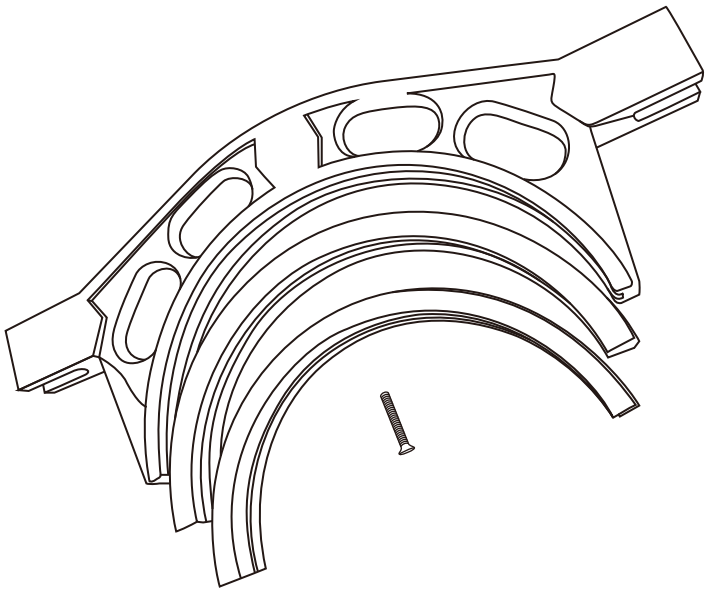
5.7 Prepare The Machine Carriage

Pull the direction lever to the maximum and open the carriage completely.



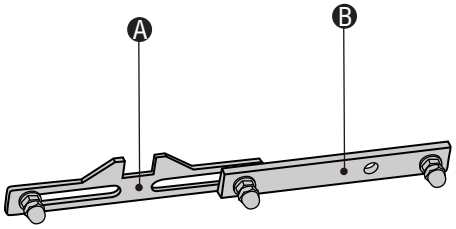
5.8 According to the pipe diameter, insert the reductions.

Select the requested reductions, and pick the suitable inserts screws in the plastic box, using the screwdriver to fasten the reductions with upper and bottom jaws. Repeat the operation with other jaws.



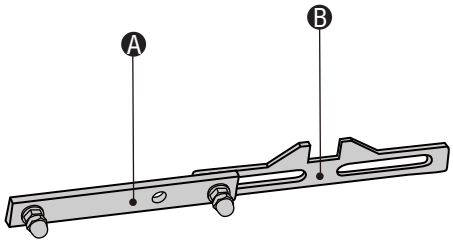
5.9 Welding Between Jaws No.2 and No.3

Assemble the dragging bar and heating plate detach device as show in the image below (standard composition after delivery).



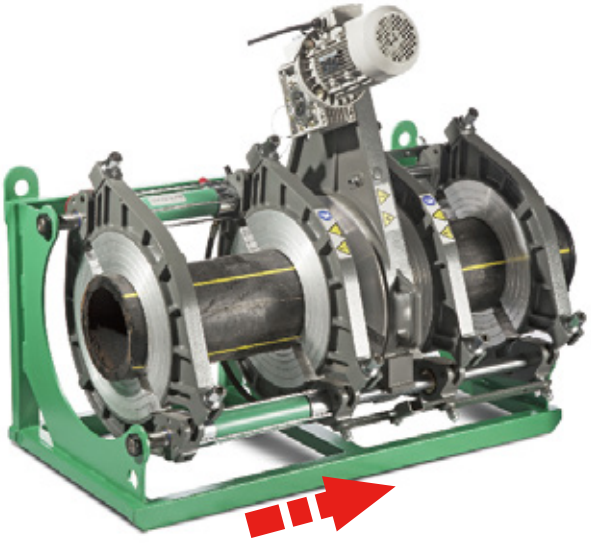
Welding Between Jaws No.3 and No.4

Assemble the dragging bar and heating plate detach device as show in the image below.

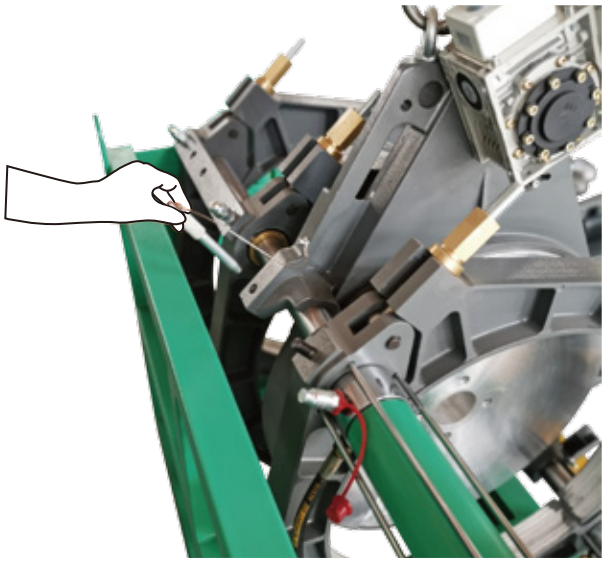


5.10 Trimming

Position the trimmer in between the pipe ends to be welded.

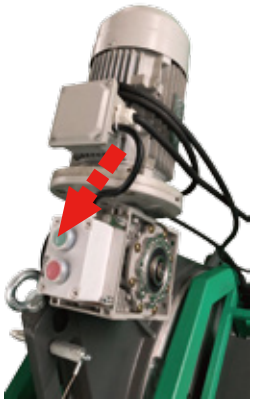


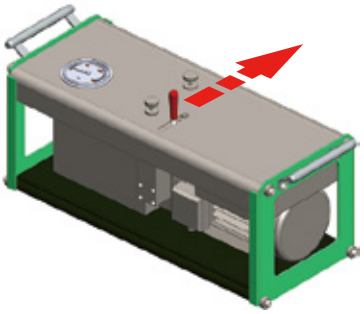
Rest the trimmer on the lower piston rod.

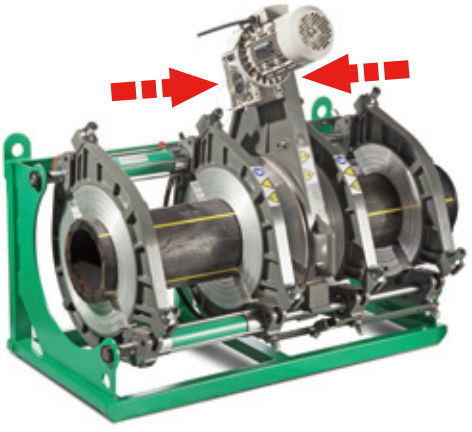


Keep the trimmer stand on the upper piston rod with the help of blocking bolt.

Turn on the trimmer by pressing the start button(Green one).
In order to not overstress the trimmer motor, you should increase the milling pressure gradually, to overcome the dragging pressure Pt. And the milling pressure could be up to maximum 10bar.



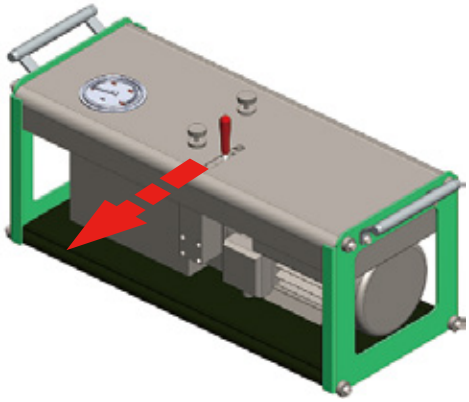




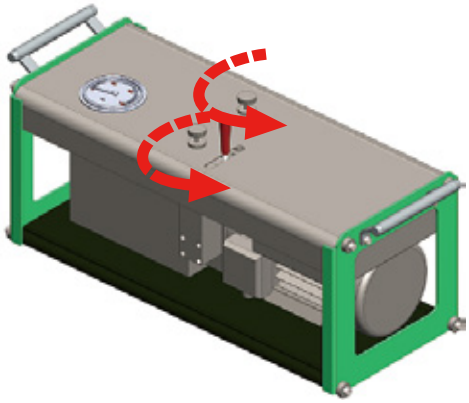
When the continuous and even chip comes out from both pipe ends, stop the motor by pressing the stop button(red button).
Open the machine carriage, remove the trimmer, and place it in its support. Please remove the chips without touching the trimmed ends. Please clean the pipe ends if some dust remains.

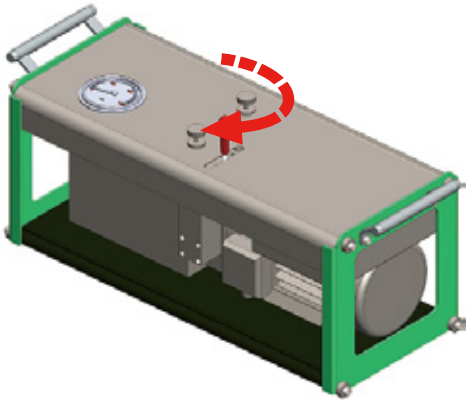
5.11 Measuring The Dragging Pressure P_t

Pull the direction lever maximum and open the machine carriage completely.

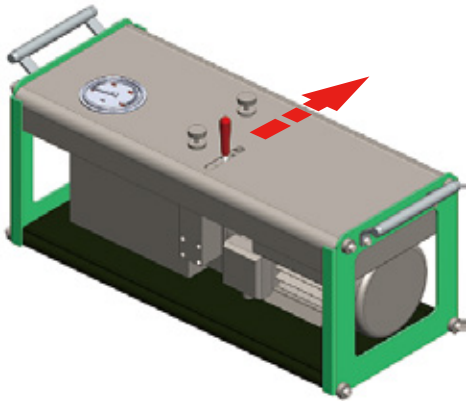


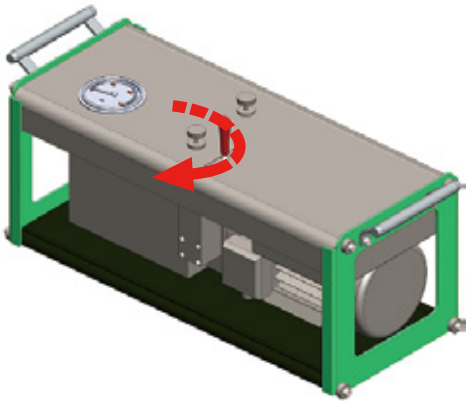
Zero the pressure in the hydraulic system by rotating the pressure relief valve and pressure regulated valve in counterclockwise way.
Then close the pressure relief valve by rotating it in clockwise way.





Then push the direction lever to maximum and gradually rotate the pressure regulated valve in a clockwise way, until the movable carriage gets in motion. Read the current pressure on the gauge and writ it down.

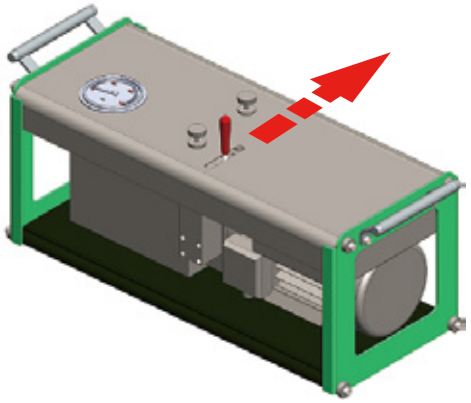




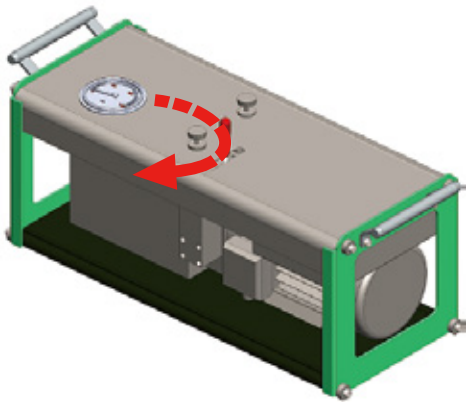
Note: You are requested to measure the dragging pressure before every welding.

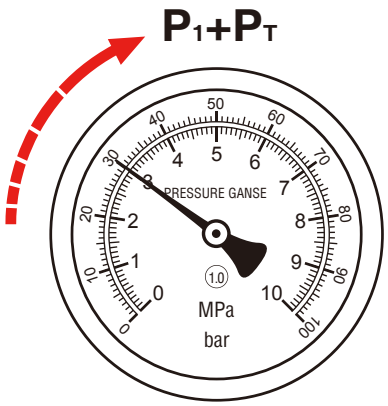
5.12 Single Pressure Welding Cycle

Set the Phase 1 pressure (P_1+P_t) on the hydraulic power unit.
Close the machine carriage and push the direction lever to the maximum.

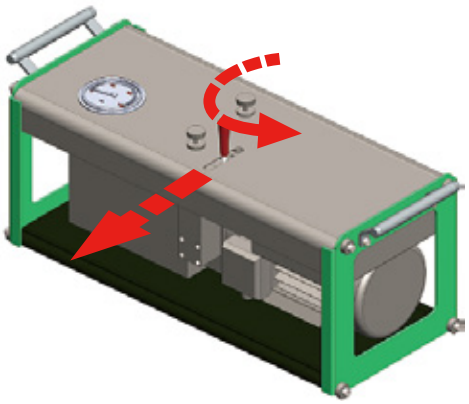


Gradually rotating the pressure regulated valve in a clockwise way until the pressure gauge show the pressure (P_1+P_t).

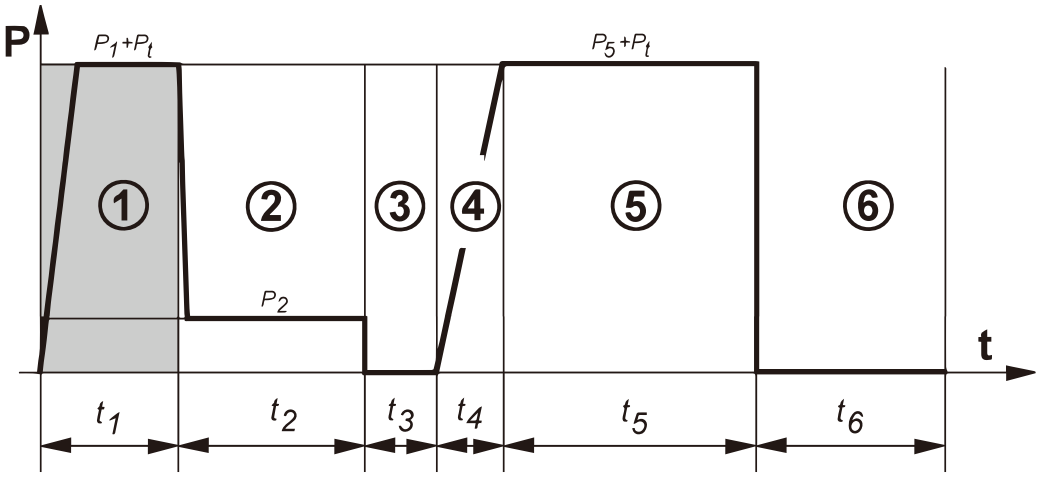




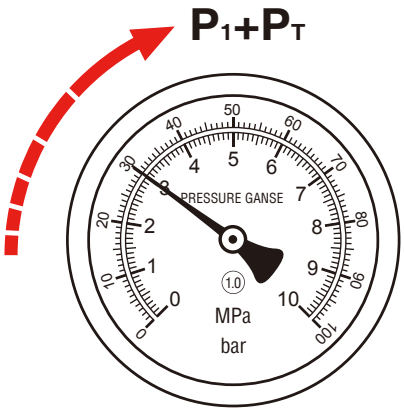
Then open the pressure relief valve by rotating it in a counterclockwise way, and pull the direction lever to open the machine carriage completely.

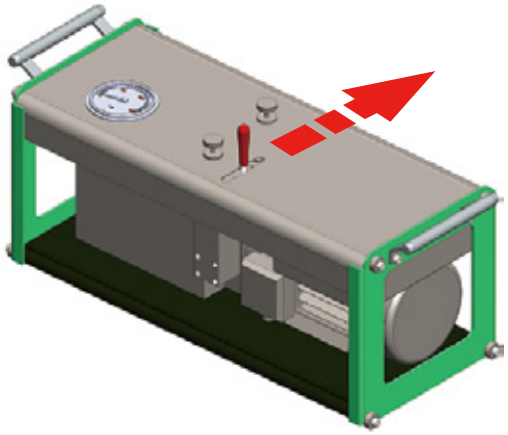


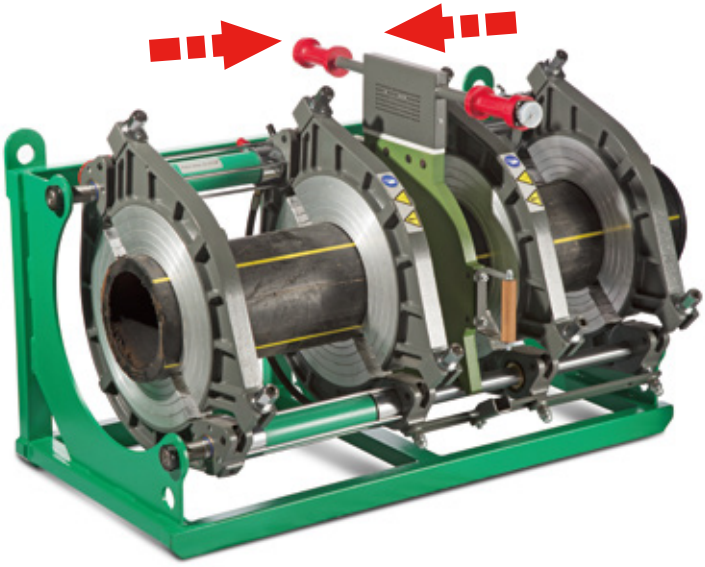
Phase 1: Bead Up



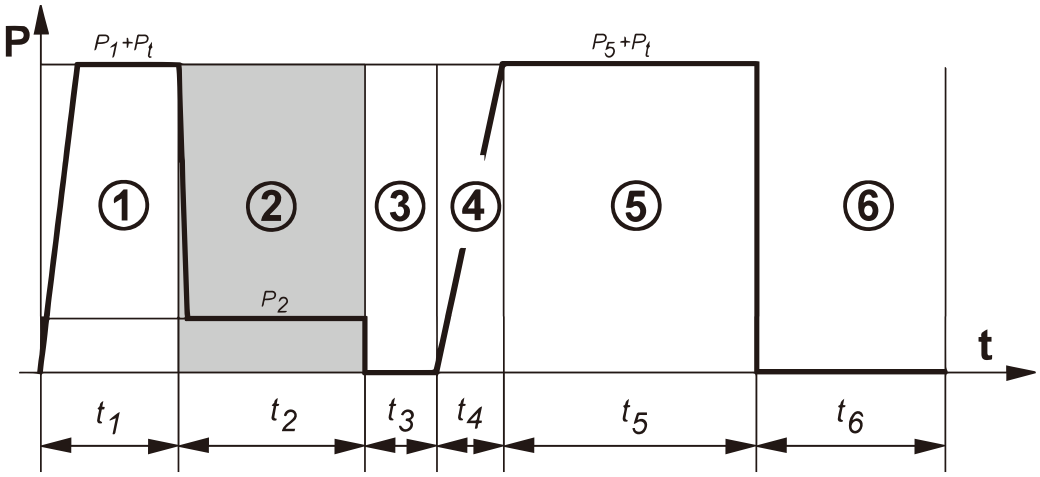
When the heating plate reaches the set temperature, insert it in between the two pipe ends. Close the pressure relief valve by rotating it in a clockwise way. And push the direction lever to close the carriage and keep the bead up pressure (**P1+Pt**) until the bead height reaches the requested one. Then release the direction lever slowly.







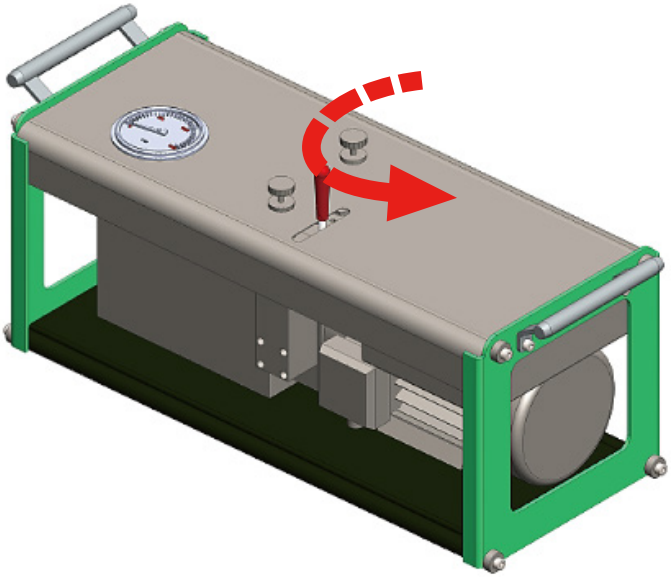
Phase 2: Soaking

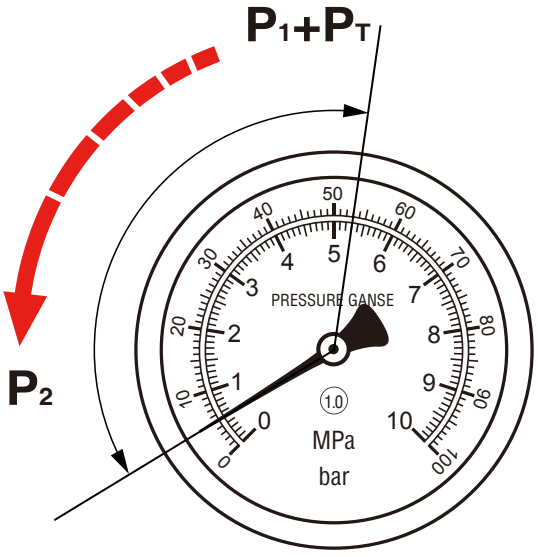


(Soaking pressure is needed to keep the two pipe ends in contact with the heating plate during this period.)

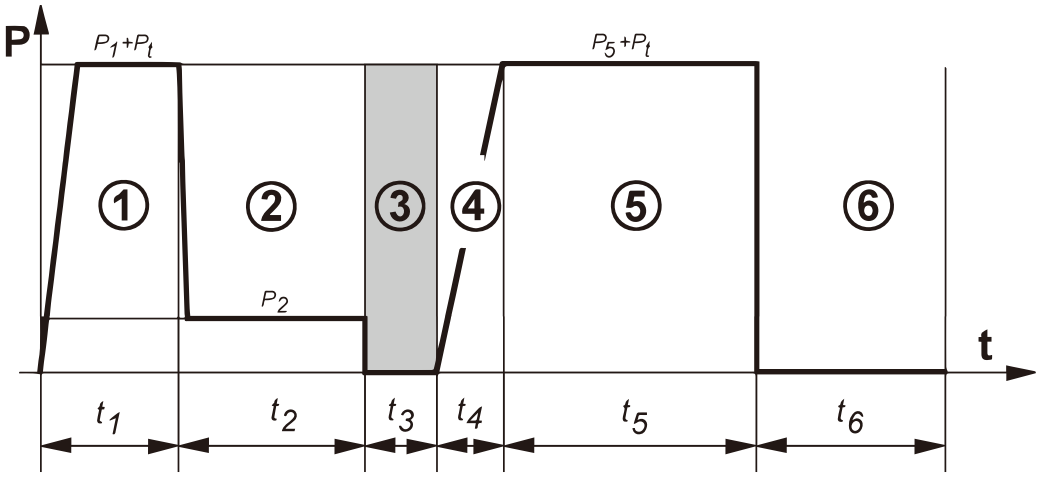
Slowly release the pressure relief valve in a counterclockwise way until the pressure gauge shows up the soaking pressure (**P2**), then close the pressure relief valve immediately in a clockwise way.

Wait for **T2** time to end. But please be sure that the pipe ends never detach from the heating plate. If this happen, please repeat the welding.



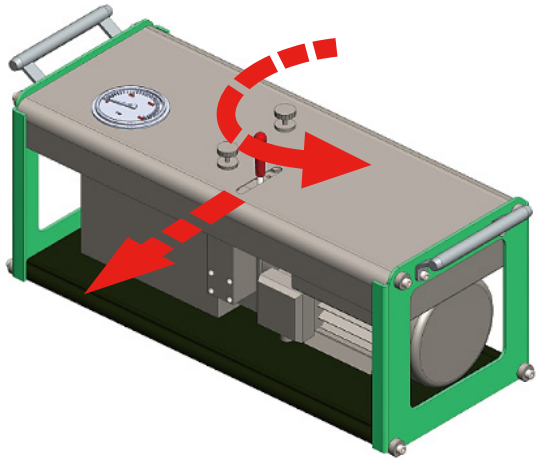


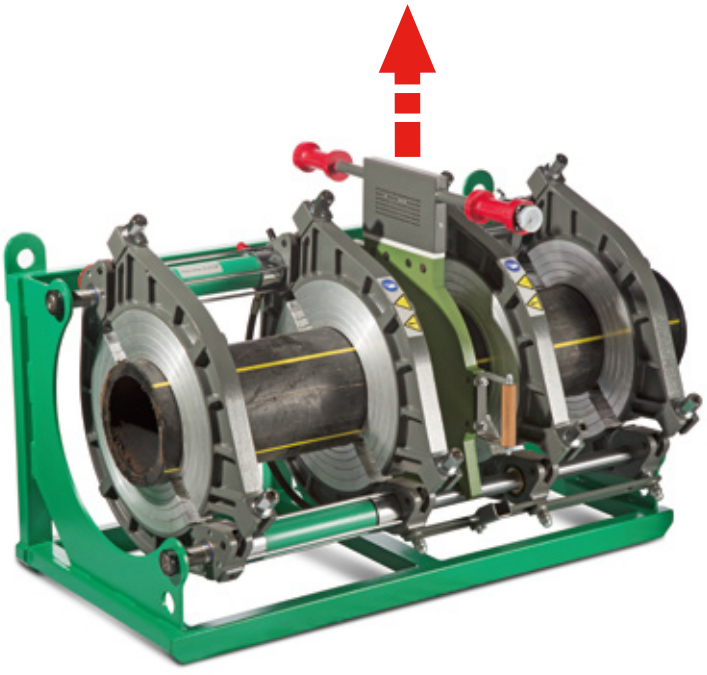
Phase 3: Removal of Heating Plate



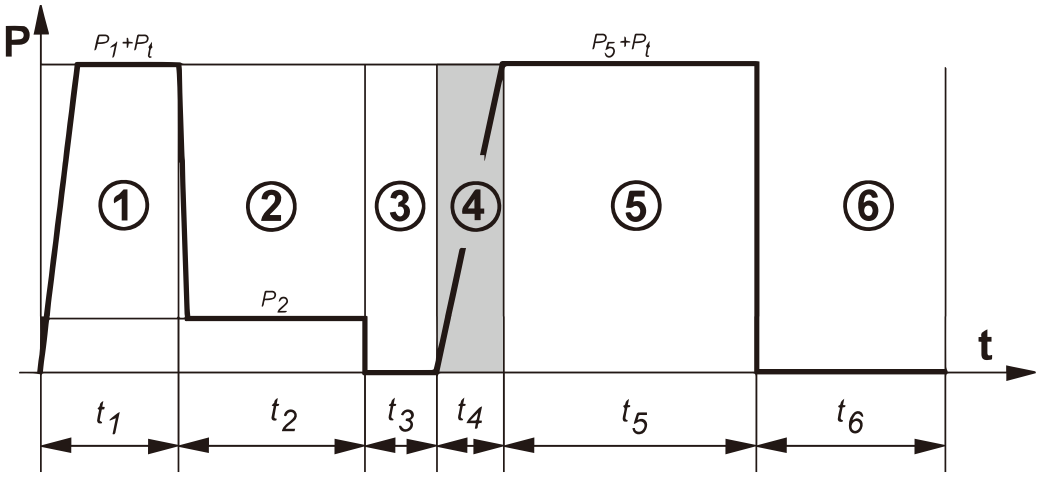
Once the T2 time ended,

Open the pressure relief valve, and open the machine carriage by pulling the direction lever, and remove the heating plate within T3 time.

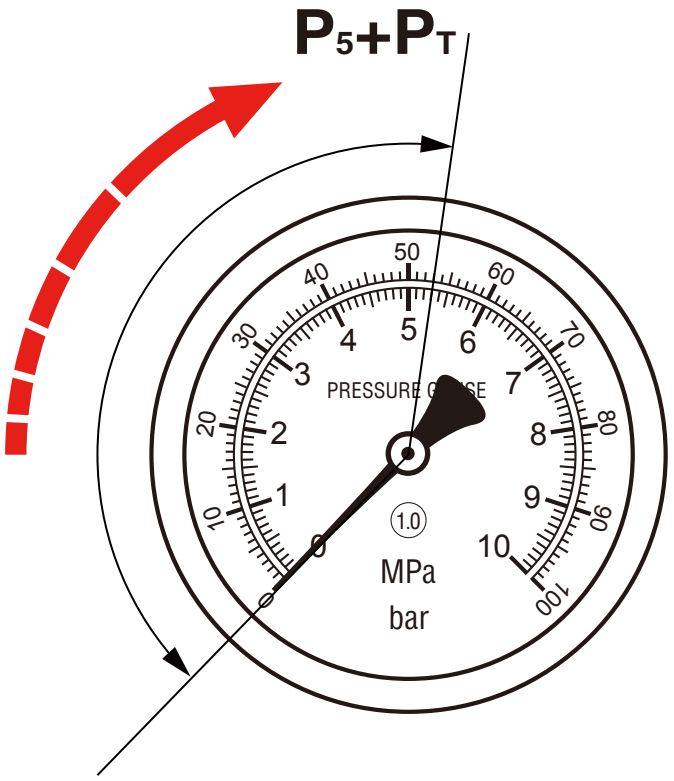




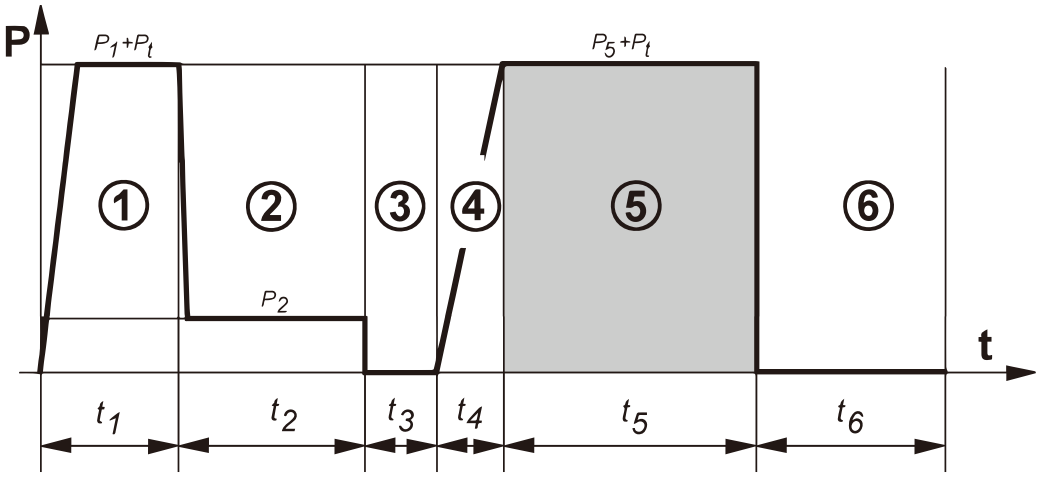
Phase 4: Reach of Welding Pressure



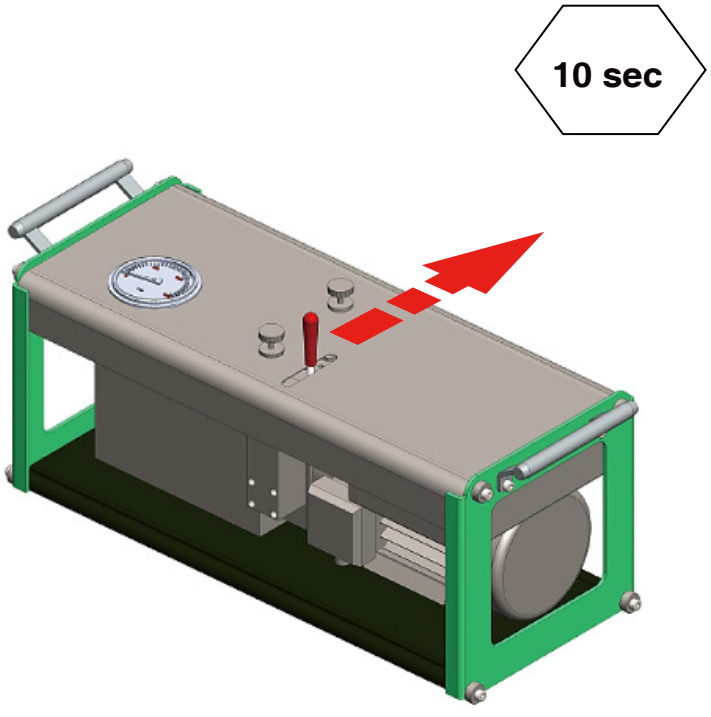
Close the pressure relief valve, and push the direction lever to maximum , meanwhile gradually increasing the pressure until the pressure gauge reaches the welding pressure (**P_5+P_t**) , within **T_4** time.



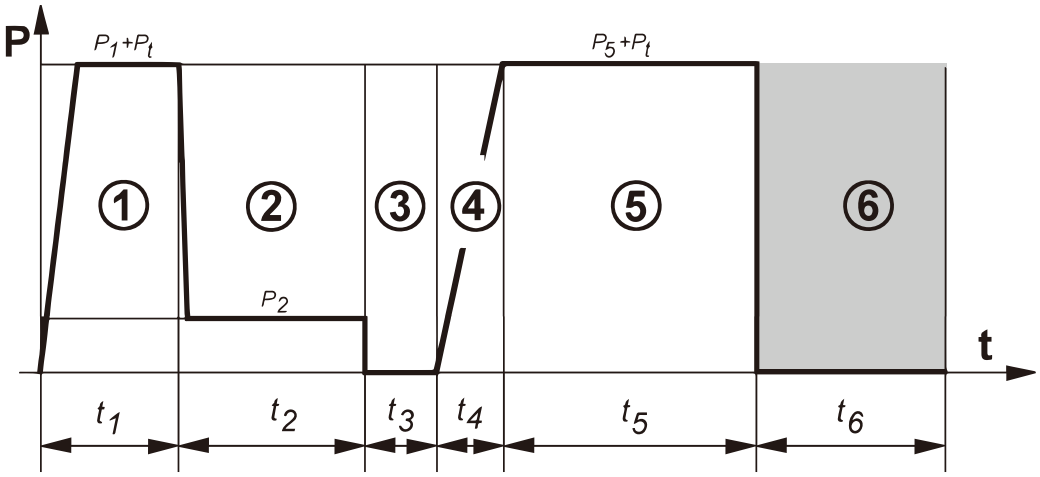
Phase 5: Welding



To stabilize the pressure(**P_5+P_t**), please keep the direction lever pushed for around 10seconds. Then release the direction lever slowly. Wait **T_5** time to end.



Phase 6: Cooling



After time **T5**, release the pressure by rotating pressure relief valve in a counterclockwise way and remove the jointed pipe from the machine after time **T6**.

When you continue next joints:

1. You are suggested to measure the dragging pressure again.
2. You are suggested to measure the bead-up and welding pressure again.
3. You could use the memory time(**T2** and **T5**) already set by timer if welding pipe with same specifications.
4. If weld other pipes with different specifications, please repeat above steps with the standard used.

When you complete the welding:

1. Open the jaws and remove the welded pipe.
2. Unplug the machines from the main power and disconnect all cables.
3. Clean the machine accurately.

6. Maintenance

Note: Please use the recommended hydraulic oil to replace used oil (See technical specification chart).

Used oil is very pollutant, take it to the nearest hazardous waste collection site.

Item	Description	Check before use	First month	Every 6 months	Every year
Trimmer	◎Replace both blades			●	
	◎Replace the cable if it is broken	●			●
	◎Tighten mechanical connections		●	●	
Heating plate	◎Clean the heating plate	●			
	◎Re-coat heating plate with Teflon again if necessary or replace the heating plate	●			●
	◎Tighten mechanical connections	●		●	
Hydraulic system	◎Check pressure gauge if works in normal or not	●			●
	◎Replace seals if the hydraulic unit is leaking	●			
	◎Check the oil level		●	●	
	◎Completely replace the hydraulic oil				
	◎Replace if the oil hose is broken	●			●
	◎Keep the quick coupling and connectors clean	●			
Basic Frame	◎Keep piston rod clear	●			
	◎Keep the quick coupling connectors clean	●			
	◎After use, cover the quick coupling connectors with plastic cap	●			
	◎Tighten mechanical connections		●	●	
Power Supply	◎Press the testing button of circuit protector to make sure it works	●			
	◎Replace the cable, plug and sockets if broken	●			

7. Trouble shooting

If the malfunctions happened with your V series machines, please send the machine to Riyang`s authorized dealer or contact directly Riyang in China. We will assist you to resolve the problems. If your machine still under warranty period, Riyang dealer will totally cover the responsibility to fix your machine; if no Riyang dealer in your area, we will send you the replacement parts, and replace it by certified technical personnel.

Note: *Please unplug the machine from main power before you working on the electrical problems.*

7.1 Hydraulic Power Unit

❶ **Problem:** The pump motor does not work.

Possible Cause	Solution
Power source not connected well	Check the power cable connected well with main power or not.
Sockets connection is loosen	Check the sockets connection, please restore it if necessary.
Failure on the electrical parts	Check the micro-switch, solid relay.

❷ **Problem:** The pump motor rotating slowly with abnormal noise.

Possible Cause	Solution
The motor is overloaded	Make sure the working pressure is less than 120bar(V800),140bar(V1000),160bar(V1200).
The oil filter is blocked	Check the oil filter and clean it.
Failure on the motor	Repair or replace the motor.
The input voltage is unstable	Check the power instability.

❸ **Problem:** Oil leakage.	
Possible Cause	Solution
Quick coupling connectors loosen or worn out	Tighten the loosen connectors, or replace the worn-out connectors.
Hydraulic hoses worn out	Replace the hydraulic hoses.
Oil seal between oil tank and block not fitted well	Restore the oil seal, replace it if necessary.
The hydraulic block is not working well	Replace the hydraulic block.

❹ **Problem:** Lack of pressure.	
Possible Cause	Solution
Hydraulic oil in the tank is not sufficient	Add the oil to requested level.
The pressure relief valve is not closed completely	Completely close the pressure relief valve by rotating in a clockwise way.
Air in the hydraulic system	Directly unite the quick coupling connectors-connections (hydraulic power unit), and activate the hydraulic motor for 30 seconds by pushing the direction lever.
The pressure relief valve is out of operation	Replace the pressure relief valve.
The quick coupling connector is blocked	Replace the quick coupling connectors.

7.2 Machine Carriage

❶ **Problem:** Oil leakage.	
Possible Cause	Solution
Quick coupling connectors loosen or worn out	Tighten the loosen connectors, or replace the worn-out connectors.
Hydraulic hoses worn out	Replace the hydraulic hoses.
Oil seal kit not fitted well or worn out	Please restore the kit if necessary or replace it.
Cylinder or piston scratched or worn out	Please replace it.

❷ **Problem:** Carriage is trembling when in motion.	
Possible Cause	Solution
Lack pressure caused by air in the hydraulic cylinders	Move the machine carriage back and forward by activating the direction lever, until the air is eliminated.

7.3 Heating Plate

❶ **Problem:** The temperature display shows up“**HH**”.	
Possible Cause	Solution
Circuit open	Check the heating sensor connected well or not. Check the sockets disconnected or not. Check the cable disconnected or not.

❷ **Problem:** The heating plate can not heat up, display indicated the environment temperature.	
Possible Cause	Solution
Signal interrupted	Replace the solid relay. Replace the temperature controller.

❸ **Problem:** The heating plate can heat up, however the display not show the actual temperature.	
Possible Cause	Solution
Failure on the temperature controller	Replace the temperature controller.

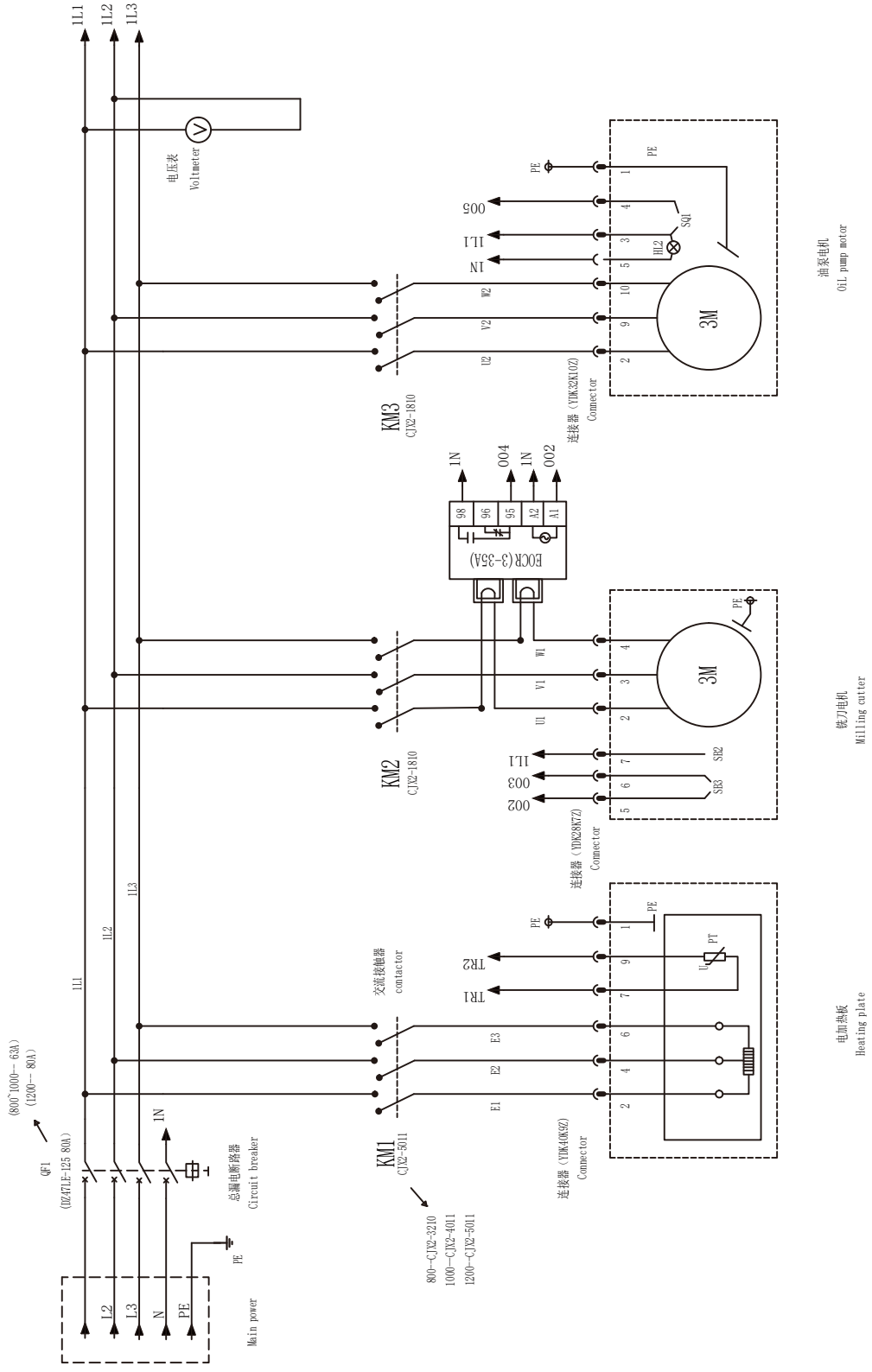
7.4 Trimmer

❶ **Problem:** The motor does not work.	
Possible Cause	Solution
Power source not connected well	Check the power cable connected well with main power or not.
Sockets connection is loosen	Check the sockets connection, please restore it if necessary.
Failure on motor	Repair it, if can not, replace it.

❷ **Problem:** It could not face the pipe ends with continuous chips.	
Possible Cause	Solution
Blade is blunt	Switch to another side, or replace it.
Blade surface lower than the trimmer plate	Using thin paper or copper to fill in between blade and trimmer plate.

8. Schematic Diagram

Please unplug the machine from main power before you working on the electrical components. All inspection and intervention on the electrical system should be under process of the certified electrical personnel.



WELDING PARAMETER CHARTS

V800

RAM=44 cm²

HDPE

DVS2207-1-2016
ISO21307-2017

PP

DVS2207-11 (2017)

RIYANG INSPIRED BY FUSION WELDING

Model V800 (400mm - 800mm) Ram (mm²): 4400 Parameter: DVS 2207-1:2016

TEMP: 220 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 130mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15°C	15°C to 25°C	25°C to 40°C
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
400	41	9.8	4	4	4	1.5	0.28	1m 38s	7.2s	7.2s	4	4	4	0h 8m	0h 10m	0h 13m
	33	12.1	5	5	5	2.0	0.34	2m 0s	8s	8s	5	5	5	0h 10m	0h 12m	0h 16m
	26	15.4	6	6	7	2.0	0.43	2m 32s	9s	9.4s	6	6	7	0h 12m	0h 15m	0h 19m
	21	19.0	7	8	8	2.5	0.52	3m 10s	10s	11s	7	8	8	0h 14m	0h 18m	0h 24m
	17	23.5	9	10	10	2.5	0.64	3m 59s	11.4s	13.1s	9	10	10	0h 17m	0h 22m	0h 29m
	13.6	29.4	11	12	13	3.0	0.78	4m 52s	13.2s	15.5s	11	12	13	0h 21m	0h 27m	0h 36m
	11	36.4	13	14	15	3.0	0.95	6m 5s	15.9s	18.8s	13	14	15	0h 26m	0h 33m	0h 44m
	9	44.4	16	17	18	3.5	1.13	7m 23s	18.3s	22.4s	16	17	18	0h 32m	0h 41m	0h 54m
	7.4	54.1	19	20	21	4.0	1.34	9m 0s	21s	27s	19	20	21	0h 39m	0h 50m	1h 6m
450	41	11.0	5	5	6	1.5	0.35	1m 49s	7.6s	7.6s	5	5	6	0h 9m	0h 11m	0h 14m
	33	13.6	6	6	7	2.0	0.43	2m 16s	8.5s	8.7s	6	6	7	0h 11m	0h 13m	0h 17m
	26	17.3	8	8	9	2.0	0.54	2m 54s	9.6s	10.4s	8	8	9	0h 13m	0h 16m	0h 22m
	21	21.4	9	10	11	2.5	0.66	3m 32s	10.7s	12s	9	10	11	0h 16m	0h 20m	0h 26m
	17	26.5	11	12	13	3.0	0.81	4m 20s	12s	14s	11	12	13	0h 19m	0h 24m	0h 32m
	13.6	33.1	14	15	16	3.0	0.99	5m 33s	14.7s	17.4s	14	15	16	0h 24m	0h 30m	0h 40m
	11	40.9	17	18	19	3.5	1.20	6m 46s	17.2s	20.7s	17	18	19	0h 30m	0h 37m	0h 49m
	9	50.0	20	22	23	4.0	1.43	8m 20s	20s	25s	20	22	23	0h 36m	0h 46m	1h 1m
	7.4	60.8	24	25	27	4.0	1.69	10m 5s	22.7s	30.3s	24	25	27	0h 43m	0h 56m	1h 14m
500	41	12.2	6	6	7	2.0	0.43	2m 0s	8s	8s	6	6	7	0h 10m	0h 12m	0h 16m
	33	15.2	7	8	8	2.0	0.53	2m 32s	9s	9.4s	7	8	8	0h 12m	0h 15m	0h 19m
	26	19.2	9	10	11	2.5	0.67	3m 10s	10s	11s	9	10	11	0h 14m	0h 18m	0h 24m
	21	23.8	11	12	13	2.5	0.81	3m 59s	11.4s	13.1s	11	12	13	0h 17m	0h 22m	0h 29m
	17	29.4	14	15	16	3.0	0.99	4m 52s	13.2s	15.5s	14	15	16	0h 21m	0h 27m	0h 36m
	13.6	36.8	17	18	20	3.0	1.22	6m 10s	16s	19s	17	18	20	0h 27m	0h 34m	0h 45m
	11	45.5	21	22	24	3.5	1.48	7m 33s	18.6s	22.9s	21	22	24	0h 33m	0h 41m	0h 55m
	9	55.6	25	27	28	4.0	1.77	9m 15s	21.4s	27.8s	25	27	28	0h 40m	0h 51m	1h 8m
	7.4	67.6	29	31	33	4.0	2.09	11m 15s	24.4s	33.8s	29	31	33	0h 48m	1h 2m	1h 22m
560	41	13.7	8	8	9	2.0	0.54	2m 16s	8.5s	8.7s	8	8	9	0h 11m	0h 13m	0h 17m
	33	17.0	9	10	11	2.0	0.66	2m 49s	9.4s	10.1s	9	10	11	0h 12m	0h 16m	0h 21m
	26	21.5	12	13	13	2.5	0.83	3m 37s	10.8s	12.2s	12	13	13	0h 16m	0h 20m	0h 27m
	21	26.7	14	15	16	3.0	1.02	4m 25s	12.2s	14.3s	14	15	16	0h 19m	0h 25m	0h 33m
	17	32.9	17	19	20	3.0	1.24	5m 28s	14.5s	17.1s	17	19	20	0h 24m	0h 30m	0h 40m
	13.6	41.2	21	23	25	3.5	1.53	6m 52s	17.3s	21s	21	23	25	0h 30m	0h 38m	0h 50m
	11	50.9	26	28	30	4.0	1.86	8m 25s	20.2s	25.3s	26	28	30	0h 36m	0h 47m	1h 2m
	9	62.2	31	33	35	4.0	2.22	10m 20s	23s	31s	31	33	35	0h 44m	0h 57m	1h 15m
	7.4	75.7	37	39	42	4.5	2.62	12m 35s	26.4s	35s	37	39	42	0h 54m	1h 9m	1h 32m
630	41	15.4	10	10	11	2.0	0.68	2m 32s	9s	9.4s	10	10	11	0h 12m	0h 15m	0h 19m
	33	19.1	12	13	13	2.5	0.84	3m 10s	10s	11s	12	13	13	0h 14m	0h 18m	0h 24m
	26	24.2	15	16	17	2.5	1.05	4m 4s	11.6s	13.4s	15	16	17	0h 18m	0h 22m	0h 30m
	21	30.0	18	19	21	3.0	1.29	5m 2s	13.6s	16s	18	19	21	0h 22m	0h 28m	0h 37m
	17	37.1	22	24	25	3.5	1.57	6m 10s	16s	19s	22	24	25	0h 27m	0h 34m	0h 45m
	13.6	46.3	27	29	31	3.5	1.94	7m 44s	18.9s	23.4s	27	29	31	0h 33m	0h 42m	0h 56m
	11	57.3	33	35	38	4.0	2.35	9m 30s	21.8s	28.5s	33	35	38	0h 41m	0h 52m	1h 9m
	9	70.0	39	42	45	4.0	2.80	11m 40s	25s	35s	39	42	45	0h 50m	1h 4m	1h 25m
	7.4	85.1	46	50	53	4.5	3.32	14m 10s	28.8s	35s	46	50	53	1h 1m	1h 18m	1h 43m
710	41	17.3	12	13	14	2.0	0.86	2m 54s	9.6s	10.4s	12	13	14	0h 13m	0h 16m	0h 22m
	33	21.5	15	16	17	2.5	1.06	3m 37s	10.8s	12.2s	15	16	17	0h 16m	0h 20m	0h 27m
	26	27.3	19	20	21	3.0	1.34	4m 31s	12.4s	14.5s	19	20	21	0h 20m	0h 25m	0h 33m
	21	33.8	23	25	26	3.0	1.64	5m 39s	14.9s	17.6s	23	25	26	0h 25m	0h 31m	0h 41m
	17	41.8	28	30	32	3.5	2.00	6m 57s	17.5s	21.2s	28	30	32	0h 30m	0h 38m	0h 51m
	13.6	52.2	34	37	39	4.0	2.46	8m 40s	20.5s	26s	34	37	39	0h 37m	0h 48m	1h 3m
	11	64.5	42	45	48	4.0	2.98	10m 45s	23.7s	32.3s	42	45	48	0h 46m	0h 59m	1h 18m
	9	78.9	50	53	57	4.5	3.56	13m 5s	27.2s	35s	50	53	57	0h 56m	1h 12m	1h 35m
	7.4	95.9	59	63	67	5.0	4.21	15m 55s	31.4s	35s	59	63	67	1h 8m	1h 27m	1h 56m
800	41	19.5	15	16	17	2.5	1.09	3m 15s	10.2s	11.3s	15	16	17	0h 14m	0h 19m	0h 25m
	33	24.2	19	20	22	2.5	1.35	4m 4s	11.6s	13.4s	19	20	22	0h 18m	0h 22m	0h 30m
	26	30.8	24	25	27	3.0	1.69	5m 7s	13.8s	16.2s	24	25	27	0h 22m	0h 28m	0h 37m
	21	38.1	29	31	33	3.5	2.08	6m 20s	16.4s	19.5s	29	31	33	0h 28m	0h 35m	0h 46m
	17	47.1	36	38	41	3.5	2.53	7m 54s	19.2s	23.8s	36	38	41	0h 34m	0h 43m	0h 57m
	13.6	58.8	44	47	50	4.0	3.12	9m 45s	22.2s	29.3s	44	47	50	0h 42m	0h 54m	1h 11m
	11	72.7	53	57	61	4.5	3.78	12m 5s	25.7s	35s	53	57	61	0h 52m	1h 6m	1h 28m
	9	88.9	63	68	72	4.5	4.52	14m 45s	29.7s	35s	63	68	72	1h 3m	1h 21m	1h 47m
	7.4	108.1	75	80	86	5.0	5.35	18m 0s	34.5s	35s	75	80	86	1h 17m	1h 38m	2h 11m

RIYANG
INSPIRED BY FUSION WELDING

Model V800 (400mm - 800mm) Ram (mm²): 4400.0 Paramater: Single High Pressure (ISO21307:2017)

TEMP: 215 ± 15C				PHASE 1			PHASE 2					PHASE 3	PHASE 4				PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)				Bead Up Pressure (see note a) BAR			Heat Soak (See Note c)			Min Bead Size	Maximum Heater Removal Time	Maximum Pressure Up is Not Specified	Weld Pressure BAR			Minimim Cool Time Under Pressure	Additional Cool Time out of Machine (See Note d)	
				ADD DRAG (see note b)			0 - DRAG ONLY						ADD DRAG					
				P1 / t1			P2	t2			t3	t4	P3			t5	t6	
D_n	OD	SDR	e_n	Min	Tgt	Max	BAR	Min	Tgt	Max	mm			Min	Tgt	Max		
400	400	41	9.8	11	14	17	0 - DRAG ONLY	1m 38s	1m 47s	1m 57s	2.5	8s	-	11	14	17	0h 4m	d
	400	33	12.1	14	17	21		2m 1s	2m 13s	2m 25s	2.8	10s	-	14	17	21	0h 5m	d
	400	26	15.4	18	22	26		2m 34s	2m 49s	3m 5s	3.3	10s	-	18	22	26	0h 7m	d
	400	21	19.0	22	27	32		3m 10s	3m 30s	3m 49s	3.9	12s	-	22	27	32	0h 8m	d
	400	17	23.5	27	33	39		3m 55s	4m 19s	4m 42s	4.5	12s	-	27	33	39	0h 10m	d
	400	13.6	29.4	33	40	48		4m 54s	5m 24s	5m 53s	5.4	16s	-	33	40	48	0h 13m	d
	400	11	36.4	40	49	59		6m 4s	6m 40s	7m 16s	6.5	16s	-	40	49	59	0h 16m	d
	400	9	44.4	47	59	70		7m 24s	8m 9s	8m 53s	7.7	20s	-	47	59	70	0h 19m	d
	400	7.4	54.1	56	69	83		9m 1s	9m 55s	10m 49s	9.1	25s	-	56	69	83	0h 23m	d
450	450	41	11.0	14	18	21	0 - DRAG ONLY	1m 50s	2m 1s	2m 12s	2.6	8s	-	14	18	21	0h 5m	d
	450	33	13.6	18	22	26		2m 16s	2m 30s	2m 44s	3.0	10s	-	18	22	26	0h 6m	d
	450	26	17.3	22	28	33		2m 53s	3m 10s	3m 28s	3.6	10s	-	22	28	33	0h 7m	d
	450	21	21.4	28	34	41		3m 34s	3m 56s	4m 17s	4.2	12s	-	28	34	41	0h 9m	d
	450	17	26.5	34	42	50		4m 25s	4m 51s	5m 18s	5.0	16s	-	34	42	50	0h 11m	d
	450	13.6	33.1	41	51	61		5m 31s	6m 4s	6m 37s	6.0	16s	-	41	51	61	0h 14m	d
	450	11	40.9	50	62	74		6m 49s	7m 30s	8m 11s	7.1	20s	-	50	62	74	0h 18m	d
	450	9	50.0	60	74	89		8m 20s	9m 10s	10m 0s	8.5	20s	-	60	74	89	0h 22m	d
	450	7.4	60.8	71	88	105		10m 8s	11m 9s	12m 10s	10.1	25s	-	71	88	105	0h 26m	d
500	500	41	12.2	18	22	26	0 - DRAG ONLY	2m 2s	2m 14s	2m 26s	2.8	10s	-	18	22	26	0h 5m	d
	500	33	15.2	22	27	33		2m 32s	2m 47s	3m 2s	3.3	10s	-	22	27	33	0h 7m	d
	500	26	19.2	28	34	41		3m 12s	3m 32s	3m 51s	3.9	12s	-	28	34	41	0h 8m	d
	500	21	23.8	34	42	50		3m 58s	4m 22s	4m 46s	4.6	12s	-	34	42	50	0h 10m	d
	500	17	29.4	42	51	61		4m 54s	5m 24s	5m 53s	5.4	16s	-	42	51	61	0h 13m	d
	500	13.6	36.8	51	63	75		6m 8s	6m 44s	7m 21s	6.5	16s	-	51	63	75	0h 16m	d
	500	11	45.5	62	77	91		7m 35s	8m 20s	9m 5s	7.8	20s	-	62	77	91	0h 20m	d
	500	9	55.6	74	92	109		9m 16s	10m 11s	11m 7s	9.3	25s	-	74	92	109	0h 24m	d
	500	7.4	67.6	88	108	129		11m 16s	12m 23s	13m 31s	11.1	25s	-	88	108	129	0h 29m	d
560	560	41	13.7	22	28	33	0 - DRAG ONLY	2m 17s	2m 30s	2m 44s	3.0	10s	-	22	28	33	0h 6m	d
	560	33	17.0	28	34	41		2m 50s	3m 7s	3m 24s	3.5	10s	-	28	34	41	0h 7m	d
	560	26	21.5	35	43	51		3m 35s	3m 57s	4m 18s	4.2	12s	-	35	43	51	0h 9m	d
	560	21	26.7	43	53	63		4m 27s	4m 53s	5m 20s	5.0	16s	-	43	53	63	0h 11m	d
	560	17	32.9	52	64	77		5m 29s	6m 2s	6m 35s	5.9	16s	-	52	64	77	0h 14m	d
	560	13.6	41.2	64	79	95		6m 52s	7m 33s	8m 14s	7.2	20s	-	64	79	95	0h 18m	d
	560	11	50.9	78	96	115		8m 29s	9m 20s	10m 11s	8.6	25s	-	78	96	115	0h 22m	d
	560	9	62.2	93	115	137		10m 22s	11m 24s	12m 27s	10.3	25s	-	93	115	137	0h 27m	d
	560	7.4	75.7	110	136	162		12m 37s	13m 52s	15m 8s	12.4	30s	-	110	136	162	0h 33m	d
630	630	41	15.4	28	35	42	0 - DRAG ONLY	2m 34s	2m 49s	3m 4s	3.3	10s	-	28	35	42	0h 7m	d
	630	33	19.1	35	43	52		3m 11s	3m 30s	3m 49s	3.9	12s	-	35	43	52	0h 8m	d
	630	26	24.2	44	54	65		4m 2s	4m 27s	4m 51s	4.6	12s	-	44	54	65	0h 10m	d
	630	21	30.0	54	67	80		5m 0s	5m 30s	6m 0s	5.5	16s	-	54	67	80	0h 13m	d
	630	17	37.1	66	82	97		6m 11s	6m 48s	7m 25s	6.6	20s	-	66	82	97	0h 16m	d
	630	13.6	46.3	81	100	120		7m 43s	8m 30s	9m 16s	7.9	20s	-	81	100	120	0h 20m	d
	630	11	57.3	98	122	145		9m 33s	10m 30s	11m 27s	9.6	25s	-	98	122	145	0h 25m	d
	630	9	70.0	118	146	174		11m 40s	12m 50s	14m 0s	11.5	25s	-	118	146	174	0h 30m	d
	630	7.4	85.1	139	172	205		14m 11s	15m 36s	17m 2s	13.8	30s	-	139	172	205	0h 37m	d
710	710	41	17.3	36	45	53	0 - DRAG ONLY	2m 53s	3m 10s	3m 28s	3.6	10s	-	36	45	53	0h 7m	d
	710	33	21.5	44	55	66		3m 35s	3m 57s	4m 18s	4.2	12s	-	44	55	66	0h 9m	d
	710	26	27.3	56	69	83		4m 33s	5m 0s	5m 28s	5.1	16s	-	56	69	83	0h 12m	d
	710	21	33.8	69	85	101		5m 38s	6m 12s	6m 46s	6.1	16s	-	69	85	101	0h 15m	d
	710	17	41.8	84	104	124		6m 58s	7m 39s	8m 21s	7.3	20s	-	84	104	124	0h 18m	d
	710	13.6	52.2	103	127	152		8m 42s	9m 34s	10m 26s	8.8	25s	-	103	127	152	0h 22m	d
	710	11	64.5	125	155	184		10m 45s	11m 50s	12m 55s	10.7	25s	-	125	155	184	0h 28m	d
	710	9	78.9	149	185	220		13m 9s	14m 28s	15m 47s	12.8	30s	-	149	185	220	0h 34m	d
	710	7.4	95.9	177	219	261		15m 59s	17m 35s	19m 11s	15.4	35s	-	177	219	261	0h 41m	d
800	800	41	19.5	46	57	67	0 - DRAG ONLY	3m 15s	3m 35s	3m 54s	3.9	12s	-	46	57	67	0h 8m	d
	800	33	24.2	56	70	83		4m 2s	4m 27s	4m 51s	4.6	12s	-	56	70	83	0h 10m	d
	800	26	30.8	71	88	105		5m 8s	5m 38s	6m 9s	5.6	16s	-	71	88	105	0h 13m	d
	800	21	38.1	87	108	128		6m 21s	6m 59s	7m 37s	6.7	20s	-	87	108	128	0h 16m	d
	800	17	47.1	106	132	157		7m 51s	8m 38s	9m 25s	8.1	20s	-	106	132	157	0h 20m	d
	800	13.6	58.8	131	162	193		9m 48s	10m 47s	11m 46s	9.8	25s	-	131	162	193	0h 25m	d
	800	11	72.7	159	196	234		12m 7s	13m 20s	14m 33s	11.9	30s	-	159	196	234	0h 31m	d
	800	9	88.9	190	235	280		14m 49s	16m 18s	17m 47s	14.3	30s	-	190	235	280	0h 38m	d
	800	7.4	108.1	224	278	331		18m 1s	19m 49s	21m 37s	17.2	35s	-	224	278	331	0h 46m	d

RIYANG™ INSPIRED BY FUSION WELDING

Model V800 (400mm - 800mm) Ram (mm²): 4400.0 Paramater: Single Low Pressure (ISO21307:2017)

TEMP: 225 ± 10C			PHASE 1				PHASE 2				PHASE 3	PHASE 4				PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)			Bead Up Pressure (BAR) ADD DRAG (see note a)			Minimum Bead up Size	Heat Soak See Note b 0 - DRAG ONLY				Maximum Heater Removal Time	Maximum Pressure Up Time	Weld Pressure (BAR) ADD DRAG			Minimim Cool Time Under Pressure (See Note c)	Additional Cool Time out of Machine (See Note d)
			P1			t1	P2	t2			t3	t4	P3			t5 / P3	
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Min	Tgt	Max			Min	Tgt	Max		
400	41	9.8	4	5	5	2	0 - DRAG ONLY	1m 57s	2m 12s	2m 26s	8s	15s	4	5	5	0h 13m	d
	33	12.1	5	6	6	2		2m 25s	2m 44s	3m 2s	10s	15s	5	6	6	0h 15m	d
	26	15.4	6	7	8	3		3m 5s	3m 28s	3m 51s	10s	15s	6	7	8	0h 18m	d
	21	19.0	8	9	10	3		3m 49s	4m 17s	4m 46s	12s	15s	8	9	10	0h 16m	d
	17	23.5	9	11	12	3		4m 42s	5m 18s	5m 53s	12s	15s	9	11	12	0h 17m	d
	13.6	29.4	12	13	15	4		5m 53s	6m 37s	7m 21s	16s	15s	12	13	15	0h 19m	d
	11	36.4	14	16	18	5		7m 16s	8m 11s	9m 5s	16s	15s	14	16	18	0h 23m	d
	9	44.4	17	19	21	5		8m 53s	10m 0s	11m 7s	20s	15s	17	19	21	0h 29m	d
	7.4	54.1	20	23	25	6		10m 49s	12m 10s	13m 31s	25s	15s	20	23	25	0h 38m	d
450	41	11.0	5	6	7	2	0 - DRAG ONLY	2m 12s	2m 28s	2m 45s	8s	16.5s	5	6	7	0h 14m	d
	33	13.6	6	7	8	2		2m 44s	3m 4s	3m 25s	10s	16.5s	6	7	8	0h 17m	d
	26	17.3	8	9	10	3		3m 28s	3m 54s	4m 20s	10s	16.5s	8	9	10	0h 20m	d
	21	21.4	10	11	12	3		4m 17s	4m 49s	5m 21s	12s	16.5s	10	11	12	0h 17m	d
	17	26.5	12	14	15	4		5m 18s	5m 57s	6m 37s	16s	16.5s	12	14	15	0h 18m	d
	13.6	33.1	15	17	19	4		6m 37s	7m 27s	8m 16s	16s	16.5s	15	17	19	0h 21m	d
	11	40.9	18	20	23	5		8m 11s	9m 12s	10m 14s	20s	16.5s	18	20	23	0h 26m	d
	9	50.0	21	24	27	6		10m 0s	11m 15s	12m 30s	20s	16.5s	21	24	27	0h 34m	d
	7.4	60.8	25	29	32	7		12m 10s	13m 41s	15m 12s	25s	16.5s	25	29	32	0h 47m	d
500	41	12.2	6	7	8	2	0 - DRAG ONLY	2m 26s	2m 45s	3m 3s	10s	18s	6	7	8	0h 15m	d
	33	15.2	8	9	10	3		3m 2s	3m 25s	3m 47s	10s	18s	8	9	10	0h 18m	d
	26	19.2	10	11	13	3		3m 51s	4m 20s	4m 48s	12s	18s	10	11	13	0h 17m	d
	21	23.8	12	14	15	3		4m 46s	5m 21s	5m 57s	12s	18s	12	14	15	0h 17m	d
	17	29.4	15	17	19	4		5m 53s	6m 37s	7m 21s	16s	18s	15	17	19	0h 19m	d
	13.6	36.8	18	21	23	5		7m 21s	8m 16s	9m 11s	16s	18s	18	21	23	0h 23m	d
	11	45.5	22	25	28	6		9m 5s	10m 14s	11m 22s	20s	18s	22	25	28	0h 30m	d
	9	55.6	26	30	33	7		11m 7s	12m 30s	13m 53s	25s	18s	26	30	33	0h 40m	d
	7.4	67.6	31	35	40	8		13m 31s	15m 12s	16m 54s	25s	18s	31	35	40	0h 57m	d
560	41	13.7	8	9	10	2	0 - DRAG ONLY	2m 44s	3m 4s	3m 25s	10s	19.8s	8	9	10	0h 17m	d
	33	17.0	10	11	13	3		3m 24s	3m 49s	4m 15s	10s	19.8s	10	11	13	0h 20m	d
	26	21.5	12	14	16	3		4m 18s	4m 51s	5m 23s	12s	19.8s	12	14	16	0h 17m	d
	21	26.7	15	17	19	4		5m 20s	6m 0s	6m 40s	16s	19.8s	15	17	19	0h 18m	d
	17	32.9	19	21	24	4		6m 35s	7m 25s	8m 14s	16s	19.8s	19	21	24	0h 21m	d
	13.6	41.2	23	26	29	5		8m 14s	9m 16s	10m 18s	20s	19.8s	23	26	29	0h 26m	d
	11	50.9	28	31	35	6		10m 11s	11m 27s	12m 44s	25s	19.8s	28	31	35	0h 35m	d
	9	62.2	33	38	42	7		12m 27s	14m 0s	15m 33s	25s	19.8s	33	38	42	0h 49m	d
	7.4	75.7	39	44	50	9		15m 8s	17m 2s	18m 55s	30s	19.8s	39	44	50	1h 10m	d
630	41	15.4	10	11	13	3	0 - DRAG ONLY	3m 4s	3m 27s	3m 50s	10s	21.9s	10	11	13	0h 18m	d
	33	19.1	12	14	16	3		3m 49s	4m 18s	4m 46s	12s	21.9s	12	14	16	0h 16m	d
	26	24.2	16	18	20	3		4m 51s	5m 27s	6m 3s	12s	21.9s	16	18	20	0h 17m	d
	21	30.0	19	22	24	4		6m 0s	6m 45s	7m 30s	16s	21.9s	19	22	24	0h 19m	d
	17	37.1	24	27	30	5		7m 25s	8m 20s	9m 16s	20s	21.9s	24	27	30	0h 23m	d
	13.6	46.3	29	33	37	6		9m 16s	10m 25s	11m 35s	20s	21.9s	29	33	37	0h 30m	d
	11	57.3	35	40	44	7		11m 27s	12m 53s	14m 19s	25s	21.9s	35	40	44	0h 42m	d
	9	70.0	42	48	53	8		14m 0s	15m 45s	17m 30s	25s	21.9s	42	48	53	1h 1m	d
	7.4	85.1	50	56	63	10		17m 2s	19m 9s	21m 17s	30s	21.9s	50	56	63	1h 29m	d
710	41	17.3	13	15	16	3	0 - DRAG ONLY	3m 28s	3m 54s	4m 20s	10s	24.3s	13	15	16	0h 20m	d
	33	21.5	16	18	20	3		4m 18s	4m 50s	5m 23s	12s	24.3s	16	18	20	0h 17m	d
	26	27.3	20	23	25	4		5m 28s	6m 9s	6m 50s	16s	24.3s	20	23	25	0h 18m	d
	21	33.8	24	28	31	4		6m 46s	7m 36s	8m 27s	16s	24.3s	24	28	31	0h 21m	d
	17	41.8	30	34	38	5		8m 21s	9m 24s	10m 26s	20s	24.3s	30	34	38	0h 27m	d
	13.6	52.2	37	42	47	6		10m 26s	11m 45s	13m 3s	25s	24.3s	37	42	47	0h 36m	d
	11	64.5	45	51	57	7		12m 55s	14m 31s	16m 8s	25s	24.3s	45	51	57	0h 52m	d
	9	78.9	53	60	68	9		15m 47s	17m 45s	19m 43s	30s	24.3s	53	60	68	1h 16m	d
	7.4	95.9	63	72	80	11		19m 11s	21m 35s	23m 59s	35s	24.3s	63	72	80	1h 53m	d
800	41	19.5	16	18	21	3	0 - DRAG ONLY	3m 54s	4m 23s	4m 53s	12s	27s	16	18	21	0h 17m	d
	33	24.2	20	23	26	3		4m 51s	5m 27s	6m 4s	12s	27s	20	23	26	0h 17m	d
	26	30.8	25	29	32	4		6m 9s	6m 55s	7m 42s	16s	27s	25	29	32	0h 20m	d
	21	38.1	31	35	39	5		7m 37s	8m 34s	9m 31s	20s	27s	31	35	39	0h 24m	d
	17	47.1	38	43	48	6		9m 25s	10m 35s	11m 46s	20s	27s	38	43	48	0h 31m	d
	13.6	58.8	47	53	59	7		11m 46s	13m 14s	14m 42s	25s	27s	47	53	59	0h 44m	d
	11	72.7	57	64	72	8		14m 33s	16m 22s	18m 11s	30s	27s	57	64	72	1h 5m	d
	9	88.9	68	77	86	10		17m 47s	20m 0s	22m 13s	30s	27s	68	77	86	1h 37m	d
	7.4	108.1	80	91	101	12		21m 37s	24m 19s	27m 2s	35s	27s	80	91	101	2h 24m	d

RIYANG INSPIRED BY FUSION WELDING Model V800 (400mm - 800mm) Ram (mm²): 4400 Parameter: DVS 2207-11:2017 (PP)

TEMP: 210 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 70mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15℃	15℃ to 25℃	25℃ to 40℃
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
400	41	9.8	3	3	3	1.0	0.28	1m 48s	6.5s	9s	3	3	3	0h 8m	0h 10m	0h 13m
	33	12.1	3	3	4	1.0	0.34	2m 15s	7s	11s	3	3	4	0h 10m	0h 12m	0h 16m
	26	15.4	4	4	5	1.0	0.43	2m 46s	7.9s	13.6s	4	4	5	0h 12m	0h 15m	0h 19m
	21	19.0	5	5	6	1.5	0.52	3m 26s	9s	17s	5	5	6	0h 14m	0h 18m	0h 24m
	17	23.5	6	6	7	1.5	0.64	4m 8s	10.3s	20.3s	6	6	7	0h 17m	0h 22m	0h 29m
	13.6	29.4	7	8	9	2.0	0.78	4m 56s	11.9s	24.8s	7	8	9	0h 21m	0h 27m	0h 36m
	11	36.4	9	10	10	2.0	0.95	5m 54s	13.8s	31.1s	9	10	10	0h 26m	0h 33m	0h 44m
	9	44.4	10	11	13	2.5	1.13	6m 49s	15.7s	38s	10	11	13	0h 32m	0h 41m	0h 54m
	7.4	54.1	12	13	15	3.0	1.34	7m 49s	18s	43s	12	13	15	0h 39m	0h 50m	1h 6m
450	41	11.0	3	4	4	1.0	0.35	1m 59s	6.7s	9.8s	3	4	4	0h 9m	0h 11m	0h 14m
	33	13.6	4	4	5	1.0	0.43	2m 30s	7.5s	12.3s	4	4	5	0h 11m	0h 13m	0h 17m
	26	17.3	5	5	6	1.0	0.54	3m 6s	8.5s	15.3s	5	5	6	0h 13m	0h 16m	0h 22m
	21	21.4	6	7	7	1.5	0.66	3m 45s	9.6s	18.5s	6	7	7	0h 16m	0h 20m	0h 26m
	17	26.5	7	8	9	2.0	0.81	4m 31s	11s	22s	7	8	9	0h 19m	0h 24m	0h 32m
	13.6	33.1	9	10	11	2.0	0.99	5m 29s	13s	28.4s	9	10	11	0h 24m	0h 30m	0h 40m
	11	40.9	11	12	13	2.5	1.20	6m 26s	14.9s	35s	11	12	13	0h 30m	0h 37m	0h 49m
	9	50.0	13	14	16	3.0	1.43	7m 30s	17s	43s	13	14	16	0h 36m	0h 46m	1h 1m
	7.4	60.8	15	17	19	3.0	1.69	8m 20s	19.7s	43s	15	17	19	0h 43m	0h 56m	1h 14m
500	41	12.2	4	4	5	1.0	0.43	2m 15s	7s	11s	4	4	5	0h 10m	0h 12m	0h 16m
	33	15.2	5	5	6	1.0	0.53	2m 46s	7.9s	13.6s	5	5	6	0h 12m	0h 15m	0h 19m
	26	19.2	6	7	7	1.5	0.67	3m 26s	9s	17s	6	7	7	0h 14m	0h 18m	0h 24m
	21	23.8	7	8	9	1.5	0.81	4m 8s	10.3s	20.3s	7	8	9	0h 17m	0h 22m	0h 29m
	17	29.4	9	10	11	2.0	0.99	4m 56s	11.9s	24.8s	9	10	11	0h 21m	0h 27m	0h 36m
	13.6	36.8	11	12	13	2.0	1.22	5m 58s	13.9s	31.6s	11	12	13	0h 27m	0h 34m	0h 45m
	11	45.5	13	15	16	2.5	1.48	6m 56s	15.9s	38.8s	13	15	16	0h 33m	0h 41m	0h 55m
	9	55.6	16	18	19	3.0	1.77	7m 56s	18.4s	43s	16	18	19	0h 40m	0h 51m	1h 8m
	7.4	67.6	19	21	23	3.0	2.09	8m 54s	21.4s	43s	19	21	23	0h 48m	1h 2m	1h 22m
560	41	13.7	5	5	6	1.0	0.54	2m 30s	7.5s	12.3s	5	5	6	0h 11m	0h 13m	0h 17m
	33	17.0	6	7	7	1.0	0.66	3m 1s	8.3s	14.9s	6	7	7	0h 12m	0h 16m	0h 21m
	26	21.5	8	8	9	1.5	0.83	3m 49s	9.8s	18.8s	8	8	9	0h 16m	0h 20m	0h 27m
	21	26.7	9	10	11	2.0	1.02	4m 35s	11.2s	22.5s	9	10	11	0h 19m	0h 25m	0h 33m
	17	32.9	11	12	14	2.0	1.24	5m 25s	12.8s	28s	11	12	14	0h 24m	0h 30m	0h 40m
	13.6	41.2	14	15	17	2.5	1.53	6m 29s	15s	35.4s	14	15	17	0h 30m	0h 38m	0h 50m
	11	50.9	17	19	20	3.0	1.86	7m 32s	17.2s	43s	17	19	20	0h 36m	0h 47m	1h 2m
	9	62.2	20	22	24	3.0	2.22	8m 28s	20s	43s	20	22	24	0h 44m	0h 57m	1h 15m
630	41	15.4	6	7	8	1.0	0.68	2m 46s	7.9s	13.6s	6	7	8	0h 12m	0h 15m	0h 19m
	33	19.1	8	8	9	1.5	0.84	3m 26s	9s	17s	8	8	9	0h 14m	0h 18m	0h 24m
	26	24.2	10	11	12	1.5	1.05	4m 13s	10.5s	20.6s	10	11	12	0h 18m	0h 22m	0h 30m
	21	30.0	12	13	14	2.0	1.29	5m 4s	12.1s	25.7s	12	13	14	0h 22m	0h 28m	0h 37m
	17	37.1	14	16	17	2.5	1.57	6m 2s	14s	32s	14	16	17	0h 27m	0h 34m	0h 45m
	13.6	46.3	17	19	21	2.5	1.94	7m 3s	16.1s	39.7s	17	19	21	0h 33m	0h 42m	0h 56m
	11	57.3	21	24	26	3.0	2.35	8m 4s	18.8s	43s	21	24	26	0h 41m	0h 52m	1h 9m
	9	70.0	25	28	31	3.0	2.80	9m 6s	22s	43s	25	28	31	0h 50m	1h 4m	1h 25m
710	41	17.3	8	9	10	1.0	0.86	3m 6s	8.5s	15.3s	8	9	10	0h 13m	0h 16m	0h 22m
	33	21.5	10	11	12	1.5	1.06	3m 49s	9.8s	18.8s	10	11	12	0h 16m	0h 20m	0h 27m
	26	27.3	12	13	15	2.0	1.34	4m 39s	11.3s	23s	12	13	15	0h 20m	0h 25m	0h 33m
	21	33.8	15	16	18	2.0	1.64	5m 33s	13.1s	28.9s	15	16	18	0h 25m	0h 31m	0h 41m
	17	41.8	18	20	22	2.5	2.00	6m 33s	15.1s	35.9s	18	20	22	0h 30m	0h 38m	0h 51m
	13.6	52.2	22	25	27	3.0	2.46	7m 40s	17.5s	43s	22	25	27	0h 37m	0h 48m	1h 3m
	11	64.5	27	30	33	3.0	2.98	8m 40s	20.7s	43s	27	30	33	0h 46m	0h 59m	1h 18m
800	41	19.5	10	11	12	1.5	1.09	3m 31s	9.2s	17.4s	10	11	12	0h 14m	0h 19m	0h 25m
	33	24.2	12	14	15	1.5	1.35	4m 13s	10.5s	20.6s	12	14	15	0h 18m	0h 22m	0h 30m
	26	30.8	15	17	19	2.0	1.69	5m 8s	12.3s	26.1s	15	17	19	0h 22m	0h 28m	0h 37m
	21	38.1	19	21	23	2.5	2.08	6m 9s	14.3s	32.9s	19	21	23	0h 28m	0h 35m	0h 46m
	17	47.1	23	25	28	2.5	2.53	7m 10s	16.4s	40.5s	23	25	28	0h 34m	0h 43m	0h 57m
	13.6	58.8	28	31	34	3.0	3.12	8m 11s	19.2s	43s	28	31	34	0h 42m	0h 54m	1h 11m

WELDING PARAMETER CHARTS

V1000

RAM=38.8 cm²

HDPE

DVS2207-1-2016
ISO21307-2017

PP

DVS2207-11 (2017)

RIYANG™ INSPIRED BY FUSION WELDING

Model V1000 (630mm - 1000mm) Ram (mm²): 3880 Parameter: DVS 2207-1:2016

TEMP: 220 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 130mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15°C	15°C to 25°C	25°C to 40°C
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
630	41	15.4	11	12	12	2.0	0.77	2m 32s	9s	9.4s	11	12	12	0h 12m	0h 15m	0h 19m
	33	19.1	13	14	15	2.5	0.95	3m 10s	10s	11s	13	14	15	0h 14m	0h 18m	0h 24m
	26	24.2	17	18	19	2.5	1.19	4m 4s	11.6s	13.4s	17	18	19	0h 18m	0h 22m	0h 30m
	21	30.0	21	22	23	3.0	1.46	5m 2s	13.6s	16s	21	22	23	0h 22m	0h 28m	0h 37m
	17	37.1	25	27	29	3.5	1.78	6m 10s	16s	19s	25	27	29	0h 27m	0h 34m	0h 45m
	13.6	46.3	31	33	35	3.5	2.19	7m 44s	18.9s	23.4s	31	33	35	0h 33m	0h 42m	0h 56m
	11	57.3	37	40	43	4.0	2.66	9m 30s	21.8s	28.5s	37	40	43	0h 41m	0h 52m	1h 9m
	9	70.0	45	48	51	4.0	3.18	11m 40s	25s	35s	45	48	51	0h 50m	1h 4m	1h 25m
	7.4	85.1	53	56	60	4.5	3.76	14m 10s	28.8s	35s	53	56	60	1h 1m	1h 18m	1h 43m
710	41	17.3	14	15	16	2.0	0.98	2m 54s	9.6s	10.4s	14	15	16	0h 13m	0h 16m	0h 22m
	33	21.5	17	18	19	2.5	1.20	3m 37s	10.8s	12.2s	17	18	19	0h 16m	0h 20m	0h 27m
	26	27.3	21	23	24	3.0	1.51	4m 31s	12.4s	14.5s	21	23	24	0h 20m	0h 25m	0h 33m
	21	33.8	26	28	30	3.0	1.86	5m 39s	14.9s	17.6s	26	28	30	0h 25m	0h 31m	0h 41m
	17	41.8	32	34	36	3.5	2.26	6m 57s	17.5s	21.2s	32	34	36	0h 30m	0h 38m	0h 51m
	13.6	52.2	39	42	45	4.0	2.79	8m 40s	20.5s	26s	39	42	45	0h 37m	0h 48m	1h 3m
	11	64.5	47	51	54	4.0	3.38	10m 45s	23.7s	32.3s	47	51	54	0h 46m	0h 59m	1h 18m
	9	78.9	57	61	65	4.5	4.04	13m 5s	27.2s	35s	57	61	65	0h 56m	1h 12m	1h 35m
	7.4	95.9	67	72	76	5.0	4.78	15m 55s	31.4s	35s	67	72	76	1h 8m	1h 27m	1h 56m
800	41	19.5	17	19	20	2.5	1.24	3m 15s	10.2s	11.3s	17	19	20	0h 14m	0h 19m	0h 25m
	33	24.2	21	23	24	2.5	1.53	4m 4s	11.6s	13.4s	21	23	24	0h 18m	0h 22m	0h 30m
	26	30.8	27	29	31	3.0	1.92	5m 7s	13.8s	16.2s	27	29	31	0h 22m	0h 28m	0h 37m
	21	38.1	33	35	38	3.5	2.36	6m 20s	16.4s	19.5s	33	35	38	0h 28m	0h 35m	0h 46m
	17	47.1	40	43	46	3.5	2.87	7m 54s	19.2s	23.8s	40	43	46	0h 34m	0h 43m	0h 57m
	13.6	58.8	50	53	57	4.0	3.54	9m 45s	22.2s	29.3s	50	53	57	0h 42m	0h 54m	1h 11m
	11	72.7	60	64	69	4.5	4.29	12m 5s	25.7s	35s	60	64	69	0h 52m	1h 6m	1h 28m
	9	88.9	72	77	82	4.5	5.12	14m 45s	29.7s	35s	72	77	82	1h 3m	1h 21m	1h 47m
	7.4	108.1	85	91	97	5.0	6.06	18m 0s	34.5s	35s	85	91	97	1h 17m	1h 38m	2h 11m
900	41	22.0	22	24	25	2.5	1.57	3m 37s	10.8s	12.2s	22	24	25	0h 16m	0h 20m	0h 27m
	33	27.3	27	29	31	3.0	1.93	4m 31s	12.4s	14.5s	27	29	31	0h 20m	0h 25m	0h 33m
	26	34.6	34	36	39	3.0	2.43	5m 49s	15.3s	18.1s	34	36	39	0h 25m	0h 32m	0h 42m
	21	42.9	42	45	48	3.5	2.98	7m 7s	17.8s	21.7s	42	45	48	0h 31m	0h 39m	0h 52m
	17	52.9	51	55	58	4.0	3.64	8m 45s	20.7s	26.3s	51	55	58	0h 38m	0h 48m	1h 4m
	13.6	66.2	63	67	72	4.0	4.47	11m 0s	24s	33s	63	67	72	0h 47m	1h 0m	1h 20m
	11	81.8	76	81	87	4.5	5.43	13m 35s	27.9s	35s	76	81	87	0h 58m	1h 14m	1h 39m
	9	100.0	91	97	104	5.0	6.48	16m 40s	32.5s	35s	91	97	104	1h 11m	1h 31m	2h 1m
	7.4	121.6	107	115	123	5.5	7.67	20m 15s	35s	35s	107	115	123	1h 26m	1h 50m	2h 27m
1000	41	24.4	27	29	31	2.5	1.93	4m 4s	11.6s	13.4s	27	29	31	0h 18m	0h 22m	0h 30m
	33	30.3	33	36	38	3.0	2.38	5m 2s	13.6s	16s	33	36	38	0h 22m	0h 28m	0h 37m
	26	38.5	42	45	48	3.5	3.00	6m 20s	16.4s	19.5s	42	45	48	0h 28m	0h 35m	0h 46m
	21	47.6	52	55	59	3.5	3.68	7m 59s	19.4s	24.1s	52	55	59	0h 34m	0h 44m	0h 58m
	17	58.8	63	67	72	4.0	4.49	9m 45s	22.2s	29.3s	63	67	72	0h 42m	0h 54m	1h 11m
	13.6	73.5	77	83	88	4.5	5.52	12m 15s	25.9s	35s	77	83	88	0h 53m	1h 7m	1h 29m
	11	90.9	94	100	107	5.0	6.70	15m 5s	30.2s	35s	94	100	107	1h 4m	1h 23m	1h 50m
	9	111.1	112	120	128	5.5	8.00	18m 30s	35s	35s	112	120	128	1h 19m	1h 41m	2h 14m

RIYANG INSPIRED BY FUSION WELDING

Model V1000 (630mm - 1000mm) Ram (mm²): 3880.0 Paramater: Single High Pressure (ISO21307:2017)

TEMP: 215 ± 150				PHASE 1			PHASE 2					PHASE 3	PHASE 4				PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)				Bead Up Pressure (see note a) BAR			Heat Soak (See Note c)			Min Bead Size		Maximum Heater Removal Time	Maximum Pressure Up is Not Specified	Weld Pressure BAR			Minimim Cool Time Under Pressure	Additional Cool Time out of Machine (See Note d)
				ADD DRAG (see note b)			0 - DRAG ONLY							ADD DRAG				
				P1 / t1			P2	t2				t3	t4	P3			t5	t6
D_n	OD	SDR	e_n	Min	Tgt	Max	BAR	Min	Tgt	Max	mm			Min	Tgt	Max		
630	630	41	15.4	32	40	47	0 - DRAG ONLY	2m 34s	2m 49s	3m 4s	3.3	10s	-	32	40	47	0h 7m	d
	630	33	19.1	40	49	59		3m 11s	3m 30s	3m 49s	3.9	12s	-	40	49	59	0h 8m	d
	630	26	24.2	50	62	74		4m 2s	4m 27s	4m 51s	4.6	12s	-	50	62	74	0h 10m	d
	630	21	30.0	61	76	90		5m 0s	5m 30s	6m 0s	5.5	16s	-	61	76	90	0h 13m	d
	630	17	37.1	75	93	110		6m 11s	6m 48s	7m 25s	6.6	20s	-	75	93	110	0h 16m	d
	630	13.6	46.3	92	114	136		7m 43s	8m 30s	9m 16s	7.9	20s	-	92	114	136	0h 20m	d
	630	11	57.3	112	138	165		9m 33s	10m 30s	11m 27s	9.6	25s	-	112	138	165	0h 25m	d
	630	9	70.0	133	165	197		11m 40s	12m 50s	14m 0s	11.5	25s	-	133	165	197	0h 30m	d
	630	7.4	85.1	158	195	233		14m 11s	15m 36s	17m 2s	13.8	30s	-	158	195	233	0h 37m	d
710	710	41	17.3	41	51	60	0 - DRAG ONLY	2m 53s	3m 10s	3m 28s	3.6	10s	-	41	51	60	0h 7m	d
	710	33	21.5	50	62	74		3m 35s	3m 57s	4m 18s	4.2	12s	-	50	62	74	0h 9m	d
	710	26	27.3	63	78	94		4m 33s	5m 0s	5m 28s	5.1	16s	-	63	78	94	0h 12m	d
	710	21	33.8	78	96	115		5m 38s	6m 12s	6m 46s	6.1	16s	-	78	96	115	0h 15m	d
	710	17	41.8	95	118	140		6m 58s	7m 39s	8m 21s	7.3	20s	-	95	118	140	0h 18m	d
	710	13.6	52.2	117	145	172		8m 42s	9m 34s	10m 26s	8.8	25s	-	117	145	172	0h 22m	d
	710	11	64.5	142	175	209		10m 45s	11m 50s	12m 55s	10.7	25s	-	142	175	209	0h 28m	d
	710	9	78.9	169	210	250		13m 9s	14m 28s	15m 47s	12.8	30s	-	169	210	250	0h 34m	d
	710	7.4	95.9	200	248	296		15m 59s	17m 35s	19m 11s	15.4	35s	-	200	248	296	0h 41m	d
800	800	41	19.5	52	64	76	0 - DRAG ONLY	3m 15s	3m 35s	3m 54s	3.9	12s	-	52	64	76	0h 8m	d
	800	33	24.2	64	79	94		4m 2s	4m 27s	4m 51s	4.6	12s	-	64	79	94	0h 10m	d
	800	26	30.8	80	100	119		5m 8s	5m 38s	6m 9s	5.6	16s	-	80	100	119	0h 13m	d
	800	21	38.1	99	122	146		6m 21s	6m 59s	7m 37s	6.7	20s	-	99	122	146	0h 16m	d
	800	17	47.1	120	149	178		7m 51s	8m 38s	9m 25s	8.1	20s	-	120	149	178	0h 20m	d
	800	13.6	58.8	148	184	219		9m 48s	10m 47s	11m 46s	9.8	25s	-	148	184	219	0h 25m	d
	800	11	72.7	180	223	266		12m 7s	13m 20s	14m 33s	11.9	30s	-	180	223	266	0h 31m	d
	800	9	88.9	215	266	317		14m 49s	16m 18s	17m 47s	14.3	30s	-	215	266	317	0h 38m	d
	800	7.4	108.1	254	315	375		18m 1s	19m 49s	21m 37s	17.2	35s	-	254	315	375	0h 46m	d
900	900	41	22.0	66	81	97	0 - DRAG ONLY	3m 40s	4m 1s	4m 23s	4.3	12s	-	66	81	97	0h 9m	d
	900	33	27.3	81	100	119		4m 33s	5m 0s	5m 27s	5.1	16s	-	81	100	119	0h 12m	d
	900	26	34.6	102	126	150		5m 46s	6m 21s	6m 55s	6.2	16s	-	102	126	150	0h 15m	d
	900	21	42.9	125	155	184		7m 9s	7m 51s	8m 34s	7.4	20s	-	125	155	184	0h 18m	d
	900	17	52.9	153	189	225		8m 49s	9m 42s	10m 35s	8.9	25s	-	153	189	225	0h 23m	d
	900	13.6	66.2	188	232	277		11m 2s	12m 8s	13m 14s	10.9	25s	-	188	232	277	0h 28m	d
	900	11	81.8	228	282	336		13m 38s	15m 0s	16m 22s	13.3	30s	-	228	282	336	0h 35m	d
	900	9	100.0	272	337	402		16m 40s	18m 20s	20m 0s	16.0	35s	-	272	337	402	0h 43m	d
	900	7.4	121.6	322	399	475		20m 16s	22m 18s	24m 19s	19.2	35s	-	322	399	475	0h 52m	d
1000	1000	41	24.4	81	100	119	0 - DRAG ONLY	4m 4s	4m 28s	4m 53s	4.7	12s	-	81	100	119	0h 10m	d
	1000	33	30.3	100	124	148		5m 3s	5m 33s	6m 4s	5.5	16s	-	100	124	148	0h 13m	d
	1000	26	38.5	126	156	186		6m 25s	7m 3s	7m 42s	6.8	20s	-	126	156	186	0h 17m	d
	1000	21	47.6	154	191	228		7m 56s	8m 44s	9m 31s	8.1	20s	-	154	191	228	0h 20m	d
	1000	17	58.8	188	233	278		9m 48s	10m 47s	11m 46s	9.8	25s	-	188	233	278	0h 25m	d
	1000	13.6	73.5	232	287	342		12m 15s	13m 29s	14m 42s	12.0	30s	-	232	287	342	0h 32m	d
	1000	11	90.9	281	348	415		15m 9s	16m 40s	18m 11s	14.6	35s	-	281	348	415	0h 39m	d
	1000	9	111.1	336	416	496		18m 31s	20m 22s	22m 13s	17.7	35s	-	336	416	496	0h 48m	d
	1000	7.4	135.1	397	492	587		22m 31s	24m 46s	27m 2s	21.3	35s	-	397	492	587	0h 58m	d

RIYANG INSPIRED BY FUSION WELDING

Model V1000 (630mm - 1000mm) Ram (mm²): 3880.0 Paramater: Single Low Pressure (ISO21307:2017)

TEMP: 225 ± 10C			PHASE 1				PHASE 2				PHASE 3	PHASE 4				PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)			Bead Up Pressure (BAR) ADD DRAG (see note a)			Minimum Bead up Size	Heat Soak See Note b 0 - DRAG ONLY				Maximum Heater Removal Time	Maximum Pressure Up Time	Weld Pressure (BAR) ADD DRAG			Minimim Cool Time Under Pressure (See Note c)	Additional Cool Time out of Machine (See Note d)
			P1			t1	P2	t2			t3	t4	P3			t5 / P3	
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Min	Tgt	Max			Min	Tgt	Max		
630	41	15.4	11	13	15	3	0 - DRAG ONLY	3m 4s	3m 27s	3m 50s	10s	21.9s	11	13	15	0h 18m	d
	33	19.1	14	16	18	3		3m 49s	4m 18s	4m 46s	12s	21.9s	14	16	18	0h 16m	d
	26	24.2	18	20	23	3		4m 51s	5m 27s	6m 3s	12s	21.9s	18	20	23	0h 17m	d
	21	30.0	22	25	28	4		6m 0s	6m 45s	7m 30s	16s	21.9s	22	25	28	0h 19m	d
	17	37.1	27	30	34	5		7m 25s	8m 20s	9m 16s	20s	21.9s	27	30	34	0h 23m	d
	13.6	46.3	33	37	42	6		9m 16s	10m 25s	11m 35s	20s	21.9s	33	37	42	0h 30m	d
	11	57.3	40	45	50	7		11m 27s	12m 53s	14m 19s	25s	21.9s	40	45	50	0h 42m	d
	9	70.0	48	54	60	8		14m 0s	15m 45s	17m 30s	25s	21.9s	48	54	60	1h 1m	d
	7.4	85.1	56	64	71	10		17m 2s	19m 9s	21m 17s	30s	21.9s	56	64	71	1h 29m	d
710	41	17.3	15	17	18	3	0 - DRAG ONLY	3m 28s	3m 54s	4m 20s	10s	24.3s	15	17	18	0h 20m	d
	33	21.5	18	20	23	3		4m 18s	4m 50s	5m 23s	12s	24.3s	18	20	23	0h 17m	d
	26	27.3	23	26	29	4		5m 28s	6m 9s	6m 50s	16s	24.3s	23	26	29	0h 18m	d
	21	33.8	28	31	35	4		6m 46s	7m 36s	8m 27s	16s	24.3s	28	31	35	0h 21m	d
	17	41.8	34	38	43	5		8m 21s	9m 24s	10m 26s	20s	24.3s	34	38	43	0h 27m	d
	13.6	52.2	42	47	53	6		10m 26s	11m 45s	13m 3s	25s	24.3s	42	47	53	0h 36m	d
	11	64.5	51	57	64	7		12m 55s	14m 31s	16m 8s	25s	24.3s	51	57	64	0h 52m	d
	9	78.9	60	69	77	9		15m 47s	17m 45s	19m 43s	30s	24.3s	60	69	77	1h 16m	d
	7.4	95.9	72	81	91	11		19m 11s	21m 35s	23m 59s	35s	24.3s	72	81	91	1h 53m	d
800	41	19.5	18	21	23	3	0 - DRAG ONLY	3m 54s	4m 23s	4m 53s	12s	27s	18	21	23	0h 17m	d
	33	24.2	23	26	29	3		4m 51s	5m 27s	6m 4s	12s	27s	23	26	29	0h 17m	d
	26	30.8	29	33	36	4		6m 9s	6m 55s	7m 42s	16s	27s	29	33	36	0h 20m	d
	21	38.1	35	40	45	5		7m 37s	8m 34s	9m 31s	20s	27s	35	40	45	0h 24m	d
	17	47.1	43	49	55	6		9m 25s	10m 35s	11m 46s	20s	27s	43	49	55	0h 31m	d
	13.6	58.8	53	60	67	7		11m 46s	13m 14s	14m 42s	25s	27s	53	60	67	0h 44m	d
	11	72.7	64	73	81	8		14m 33s	16m 22s	18m 11s	30s	27s	64	73	81	1h 5m	d
	9	88.9	77	87	97	10		17m 47s	20m 0s	22m 13s	30s	27s	77	87	97	1h 37m	d
	7.4	108.1	91	103	115	12		21m 37s	24m 19s	27m 2s	35s	27s	91	103	115	2h 24m	d
900	41	22.0	23	27	30	3	0 - DRAG ONLY	4m 23s	4m 56s	5m 29s	12s	30s	23	27	30	0h 17m	d
	33	27.3	29	33	37	4		5m 27s	6m 8s	6m 49s	16s	30s	29	33	37	0h 18m	d
	26	34.6	36	41	46	4		6m 55s	7m 47s	8m 39s	16s	30s	36	41	46	0h 22m	d
	21	42.9	45	51	57	5		8m 34s	9m 39s	10m 43s	20s	30s	45	51	57	0h 27m	d
	17	52.9	54	62	69	6		10m 35s	11m 55s	13m 14s	25s	30s	54	62	69	0h 37m	d
	13.6	66.2	67	76	85	8		13m 14s	14m 53s	16m 33s	25s	30s	67	76	85	0h 55m	d
	11	81.8	81	92	103	9		16m 22s	18m 25s	20m 27s	30s	30s	81	92	103	1h 22m	d
	9	100.0	97	110	123	11		20m 0s	22m 30s	25m 0s	35s	30s	97	110	123	2h 3m	d
	7.4	121.6	115	130	146	13		24m 19s	27m 22s	30m 24s	35s	30s	115	130	146	3h 5m	d
1000	41	24.4	29	33	37	3	0 - DRAG ONLY	4m 53s	5m 29s	6m 6s	12s	33s	29	33	37	0h 17m	d
	33	30.3	36	40	45	4		6m 4s	6m 49s	7m 35s	16s	33s	36	40	45	0h 20m	d
	26	38.5	45	51	57	5		7m 42s	8m 39s	9m 37s	20s	33s	45	51	57	0h 24m	d
	21	47.6	55	62	70	6		9m 31s	10m 43s	11m 54s	20s	33s	55	62	70	0h 32m	d
	17	58.8	67	76	85	7		11m 46s	13m 14s	14m 42s	25s	33s	67	76	85	0h 44m	d
	13.6	73.5	83	94	105	8		14m 42s	16m 33s	18m 23s	30s	33s	83	94	105	1h 7m	d
	11	90.9	100	114	127	10		18m 11s	20m 27s	22m 44s	35s	33s	100	114	127	1h 41m	d
	9	111.1	120	136	152	12		22m 13s	25m 0s	27m 47s	35s	33s	120	136	152	2h 33m	d
	7.4	135.1	142	161	180	15		27m 2s	30m 24s	33m 47s	35s	33s	142	161	180	3h 50m	d

RIYANG
INSPIRED BY FUSION WELDING

Model V1000 (630mm - 1000mm) Ram (mm²): 3880 Parameter: DVS 2207-11:2017 (PP)

TEMP: 210 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 70mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15°C	15°C to 25°C	25°C to 40°C
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
630	41	15.4	7	8	9	1.0	0.77	2m 46s	7.9s	13.6s	7	8	9	0h 12m	0h 15m	0h 19m
	33	19.1	9	10	10	1.5	0.95	3m 26s	9s	17s	9	10	10	0h 14m	0h 18m	0h 24m
	26	24.2	11	12	13	1.5	1.19	4m 13s	10.5s	20.6s	11	12	13	0h 18m	0h 22m	0h 30m
	21	30.0	13	15	16	2.0	1.46	5m 4s	12.1s	25.7s	13	15	16	0h 22m	0h 28m	0h 37m
	17	37.1	16	18	20	2.5	1.78	6m 2s	14s	32s	16	18	20	0h 27m	0h 34m	0h 45m
	13.6	46.3	20	22	24	2.5	2.19	7m 3s	16.1s	39.7s	20	22	24	0h 33m	0h 42m	0h 56m
	11	57.3	24	27	29	3.0	2.66	8m 4s	18.8s	43s	24	27	29	0h 41m	0h 52m	1h 9m
	9	70.0	29	32	35	3.0	3.18	9m 6s	22s	43s	29	32	35	0h 50m	1h 4m	1h 25m
710	41	17.3	9	10	11	1.0	0.98	3m 6s	8.5s	15.3s	9	10	11	0h 13m	0h 16m	0h 22m
	33	21.5	11	12	13	1.5	1.20	3m 49s	9.8s	18.8s	11	12	13	0h 16m	0h 20m	0h 27m
	26	27.3	14	15	17	2.0	1.51	4m 39s	11.3s	23s	14	15	17	0h 20m	0h 25m	0h 33m
	21	33.8	17	19	20	2.0	1.86	5m 33s	13.1s	28.9s	17	19	20	0h 25m	0h 31m	0h 41m
	17	41.8	20	23	25	2.5	2.26	6m 33s	15.1s	35.9s	20	23	25	0h 30m	0h 38m	0h 51m
	13.6	52.2	25	28	31	3.0	2.79	7m 40s	17.5s	43s	25	28	31	0h 37m	0h 48m	1h 3m
	11	64.5	30	34	37	3.0	3.38	8m 40s	20.7s	43s	30	34	37	0h 46m	0h 59m	1h 18m
800	41	19.5	11	12	14	1.5	1.24	3m 31s	9.2s	17.4s	11	12	14	0h 14m	0h 19m	0h 25m
	33	24.2	14	15	17	1.5	1.53	4m 13s	10.5s	20.6s	14	15	17	0h 18m	0h 22m	0h 30m
	26	30.8	17	19	21	2.0	1.92	5m 8s	12.3s	26.1s	17	19	21	0h 22m	0h 28m	0h 37m
	21	38.1	21	24	26	2.5	2.36	6m 9s	14.3s	32.9s	21	24	26	0h 28m	0h 35m	0h 46m
	17	47.1	26	29	32	2.5	2.87	7m 10s	16.4s	40.5s	26	29	32	0h 34m	0h 43m	0h 57m
	13.6	58.8	32	35	39	3.0	3.54	8m 11s	19.2s	43s	32	35	39	0h 42m	0h 54m	1h 11m
900	41	22.0	14	16	17	1.5	1.57	3m 49s	9.8s	18.8s	14	16	17	0h 16m	0h 20m	0h 27m
	33	27.3	17	19	21	2.0	1.93	4m 39s	11.3s	23s	17	19	21	0h 20m	0h 25m	0h 33m
	26	34.6	22	24	27	2.0	2.43	5m 41s	13.4s	29.8s	22	24	27	0h 25m	0h 32m	0h 42m
	21	42.9	27	30	33	2.5	2.98	6m 39s	15.3s	36.7s	27	30	33	0h 31m	0h 39m	0h 52m
	17	52.9	33	36	40	3.0	3.64	7m 42s	17.7s	43s	33	36	40	0h 38m	0h 48m	1h 4m
	13.6	66.2	40	45	49	3.0	4.47	8m 47s	21s	43s	40	45	49	0h 47m	1h 0m	1h 20m
1000	41	24.4	17	19	21	1.5	1.93	4m 13s	10.5s	20.6s	17	19	21	0h 18m	0h 22m	0h 30m
	33	30.3	22	24	26	2.0	2.38	5m 4s	12.1s	25.7s	22	24	26	0h 22m	0h 28m	0h 37m
	26	38.5	27	30	33	2.5	3.00	6m 9s	14.3s	32.9s	27	30	33	0h 28m	0h 35m	0h 46m
	21	47.6	33	37	40	2.5	3.68	7m 13s	16.5s	40.9s	33	37	40	0h 34m	0h 44m	0h 58m
	17	58.8	40	45	49	3.0	4.49	8m 11s	19.2s	43s	40	45	49	0h 42m	0h 54m	1h 11m

WELDING PARAMETER CHARTS

V1200

RAM=50.7 cm²

HDPE

DVS2207-1-2016
ISO21307-2017

PP

DVS2207-11 (2017)

RIYANG INSPIRED BY FUSION WELDING

Model V1200 (630mm - 1200mm) Ram (mm²): 5070 Parameter: DVS 2207-1:2016

TEMP: 220 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 130mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15°C	15°C to 25°C	25°C to 40°C
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
630	41	15.4	8	9	9	2.0	0.59	2m 32s	9s	9.4s	8	9	9	0h 12m	0h 15m	0h 19m
	33	19.1	10	11	12	2.5	0.73	3m 10s	10s	11s	10	11	12	0h 14m	0h 18m	0h 24m
	26	24.2	13	14	15	2.5	0.91	4m 4s	11.6s	13.4s	13	14	15	0h 18m	0h 22m	0h 30m
	21	30.0	16	17	18	3.0	1.12	5m 2s	13.6s	16s	16	17	18	0h 22m	0h 28m	0h 37m
	17	37.1	19	21	22	3.5	1.37	6m 10s	16s	19s	19	21	22	0h 27m	0h 34m	0h 45m
	13.6	46.3	24	25	27	3.5	1.68	7m 44s	18.9s	23.4s	24	25	27	0h 33m	0h 42m	0h 56m
	11	57.3	29	31	33	4.0	2.04	9m 30s	21.8s	28.5s	29	31	33	0h 41m	0h 52m	1h 9m
	9	70.0	34	37	39	4.0	2.43	11m 40s	25s	35s	34	37	39	0h 50m	1h 4m	1h 25m
	7.4	85.1	40	43	46	4.5	2.88	14m 10s	28.8s	35s	40	43	46	1h 1m	1h 18m	1h 43m
710	41	17.3	11	11	12	2.0	0.75	2m 54s	9.6s	10.4s	11	11	12	0h 13m	0h 16m	0h 22m
	33	21.5	13	14	15	2.5	0.92	3m 37s	10.8s	12.2s	13	14	15	0h 16m	0h 20m	0h 27m
	26	27.3	16	17	19	3.0	1.16	4m 31s	12.4s	14.5s	16	17	19	0h 20m	0h 25m	0h 33m
	21	33.8	20	21	23	3.0	1.42	5m 39s	14.9s	17.6s	20	21	23	0h 25m	0h 31m	0h 41m
	17	41.8	24	26	28	3.5	1.73	6m 57s	17.5s	21.2s	24	26	28	0h 30m	0h 38m	0h 51m
	13.6	52.2	30	32	34	4.0	2.13	8m 40s	20.5s	26s	30	32	34	0h 37m	0h 48m	1h 3m
	11	64.5	36	39	41	4.0	2.59	10m 45s	23.7s	32.3s	36	39	41	0h 46m	0h 59m	1h 18m
	9	78.9	43	46	49	4.5	3.09	13m 5s	27.2s	35s	43	46	49	0h 56m	1h 12m	1h 35m
	7.4	95.9	51	55	59	5.0	3.66	15m 55s	31.4s	35s	51	55	59	1h 8m	1h 27m	1h 56m
800	41	19.5	13	14	15	2.5	0.95	3m 15s	10.2s	11.3s	13	14	15	0h 14m	0h 19m	0h 25m
	33	24.2	16	18	19	2.5	1.17	4m 4s	11.6s	13.4s	16	18	19	0h 18m	0h 22m	0h 30m
	26	30.8	21	22	24	3.0	1.47	5m 7s	13.8s	16.2s	21	22	24	0h 22m	0h 28m	0h 37m
	21	38.1	25	27	29	3.5	1.80	6m 20s	16.4s	19.5s	25	27	29	0h 28m	0h 35m	0h 46m
	17	47.1	31	33	35	3.5	2.20	7m 54s	19.2s	23.8s	31	33	35	0h 34m	0h 43m	0h 57m
	13.6	58.8	38	41	43	4.0	2.71	9m 45s	22.2s	29.3s	38	41	43	0h 42m	0h 54m	1h 11m
	11	72.7	46	49	53	4.5	3.28	12m 5s	25.7s	35s	46	49	53	0h 52m	1h 6m	1h 28m
	9	88.9	55	59	63	4.5	3.92	14m 45s	29.7s	35s	55	59	63	1h 3m	1h 21m	1h 47m
	7.4	108.1	65	70	74	5.0	4.64	18m 0s	34.5s	35s	65	70	74	1h 17m	1h 38m	2h 11m
900	41	22.0	17	18	19	2.5	1.20	3m 37s	10.8s	12.2s	17	18	19	0h 16m	0h 20m	0h 27m
	33	27.3	21	22	24	3.0	1.48	4m 31s	12.4s	14.5s	21	22	24	0h 20m	0h 25m	0h 33m
	26	34.6	26	28	30	3.0	1.86	5m 49s	15.3s	18.1s	26	28	30	0h 25m	0h 32m	0h 42m
	21	42.9	32	34	37	3.5	2.28	7m 7s	17.8s	21.7s	32	34	37	0h 31m	0h 39m	0h 52m
	17	52.9	39	42	45	4.0	2.78	8m 45s	20.7s	26.3s	39	42	45	0h 38m	0h 48m	1h 4m
	13.6	66.2	48	51	55	4.0	3.42	11m 0s	24s	33s	48	51	55	0h 47m	1h 0m	1h 20m
	11	81.8	58	62	66	4.5	4.15	13m 35s	27.9s	35s	58	62	66	0h 58m	1h 14m	1h 39m
	9	100.0	70	74	79	5.0	4.96	16m 40s	32.5s	35s	70	74	79	1h 11m	1h 31m	2h 1m
	7.4	121.6	82	88	94	5.5	5.87	20m 15s	35s	35s	82	88	94	1h 26m	1h 50m	2h 27m
1000	41	24.4	21	22	24	2.5	1.48	4m 4s	11.6s	13.4s	21	22	24	0h 18m	0h 22m	0h 30m
	33	30.3	26	27	29	3.0	1.83	5m 2s	13.6s	16s	26	27	29	0h 22m	0h 28m	0h 37m
	26	38.5	32	34	37	3.5	2.30	6m 20s	16.4s	19.5s	32	34	37	0h 28m	0h 35m	0h 46m
	21	47.6	39	42	45	3.5	2.82	7m 59s	19.4s	24.1s	39	42	45	0h 34m	0h 44m	0h 58m
	17	58.8	48	52	55	4.0	3.44	9m 45s	22.2s	29.3s	48	52	55	0h 42m	0h 54m	1h 11m
	13.6	73.5	59	63	68	4.5	4.23	12m 15s	25.9s	35s	59	63	68	0h 53m	1h 7m	1h 29m
	11	90.9	72	77	82	5.0	5.13	15m 5s	30.2s	35s	72	77	82	1h 4m	1h 23m	1h 50m
	9	111.1	86	92	98	5.5	6.12	18m 30s	35s	35s	86	92	98	1h 19m	1h 41m	2h 14m
1100	41	26.8	25	27	29	3.0	1.79	4m 25s	12.2s	14.3s	25	27	29	0h 19m	0h 25m	0h 33m
	33	33.3	31	33	35	3.0	2.21	5m 33s	14.7s	17.4s	31	33	35	0h 24m	0h 30m	0h 40m
	26	42.3	39	42	44	3.5	2.78	7m 2s	17.6s	21.4s	39	42	44	0h 31m	0h 39m	0h 51m
	21	52.4	48	51	55	4.0	3.41	8m 40s	20.5s	26s	48	51	55	0h 37m	0h 48m	1h 3m
	17	64.7	58	62	67	4.0	4.16	10m 45s	23.7s	32.3s	58	62	67	0h 46m	0h 59m	1h 18m
	13.6	80.9	72	77	82	4.5	5.11	13m 25s	27.7s	35s	72	77	82	0h 57m	1h 14m	1h 38m
	11	100.0	87	93	99	5.0	6.20	16m 40s	32.5s	35s	87	93	99	1h 11m	1h 31m	2h 1m
	9	122.2	104	111	119	5.5	7.41	20m 20s	35s	35s	104	111	119	1h 26m	1h 51m	2h 27m
1200	41	29.3	30	32	34	3.0	2.13	4m 52s	13.2s	15.5s	30	32	34	0h 21m	0h 27m	0h 36m
	33	36.4	37	39	42	3.0	2.63	6m 5s	15.9s	18.8s	37	39	42	0h 26m	0h 33m	0h 44m
	26	46.2	46	50	53	3.5	3.30	7m 44s	18.9s	23.4s	46	50	53	0h 33m	0h 42m	0h 56m
	21	57.1	57	61	65	4.0	4.05	9m 30s	21.8s	28.5s	57	61	65	0h 41m	0h 52m	1h 9m
	17	70.6	69	74	79	4.5	4.94	11m 45s	25.2s	35s	69	74	79	0h 50m	1h 5m	1h 26m
	13.6	88.2	85	91	97	4.5	6.08	14m 40s	29.5s	35s	85	91	97	1h 3m	1h 20m	1h 47m
	11	109.1	103	111	118	5.0	7.38	18m 10s	34.8s	35s	103	111	118	1h 17m	1h 39m	2h 12m

RIYANG
INSPIRED BY FUSION WELDING

Model V1200 (630mm - 1200mm) Ram (mm²): 5070.0 Paramater: Single High Pressure (ISO21307:2017)

TEMP: 215 ± 15C				PHASE 1			PHASE 2						PHASE 3	PHASE 4					PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)				Bead Up Pressure (see note a) BAR			Heat Soak (See Note c)				Min Bead Size		Maximum Heater Removal Time	Maximum Pressure Up is Not Specified	Weld Pressure BAR				Minimim Cool Time Under Pressure	Additional Cool Time out of Machine (See Note d)
				ADD DRAG (see note b)			0 - DRAG ONLY								ADD DRAG					
				P1 / t1			P2	t2					t3	t4	P3				t5	t6
D_n	OD	SDR	e_n	Min	Tgt	Max	BAR	Min	Tgt	Max	mm				Min	Tgt	Max			
630	630	41	15.4	25	30	36	0 - DRAG ONLY	2m 34s	2m 49s	3m 4s	3.3		10s	-	25	30	36		0h 7m	d
	630	33	19.1	30	38	45		3m 11s	3m 30s	3m 49s	3.9		12s	-	30	38	45		0h 8m	d
	630	26	24.2	38	47	56		4m 2s	4m 27s	4m 51s	4.6		12s	-	38	47	56		0h 10m	d
	630	21	30.0	47	58	69		5m 0s	5m 30s	6m 0s	5.5		16s	-	47	58	69		0h 13m	d
	630	17	37.1	57	71	84		6m 11s	6m 48s	7m 25s	6.6		20s	-	57	71	84		0h 16m	d
	630	13.6	46.3	70	87	104		7m 43s	8m 30s	9m 16s	7.9		20s	-	70	87	104		0h 20m	d
	630	11	57.3	85	106	126		9m 33s	10m 30s	11m 27s	9.6		25s	-	85	106	126		0h 25m	d
	630	9	70.0	102	126	151		11m 40s	12m 50s	14m 0s	11.5		25s	-	102	126	151		0h 30m	d
	630	7.4	85.1	121	149	178		14m 11s	15m 36s	17m 2s	13.8		30s	-	121	149	178		0h 37m	d
710	710	41	17.3	31	39	46	0 - DRAG ONLY	2m 53s	3m 10s	3m 28s	3.6		10s	-	31	39	46		0h 7m	d
	710	33	21.5	39	48	57		3m 35s	3m 57s	4m 18s	4.2		12s	-	39	48	57		0h 9m	d
	710	26	27.3	49	60	72		4m 33s	5m 0s	5m 28s	5.1		16s	-	49	60	72		0h 12m	d
	710	21	33.8	59	74	88		5m 38s	6m 12s	6m 46s	6.1		16s	-	59	74	88		0h 15m	d
	710	17	41.8	73	90	107		6m 58s	7m 39s	8m 21s	7.3		20s	-	73	90	107		0h 18m	d
	710	13.6	52.2	89	111	132		8m 42s	9m 34s	10m 26s	8.8		25s	-	89	111	132		0h 22m	d
	710	11	64.5	108	134	160		10m 45s	11m 50s	12m 55s	10.7		25s	-	108	134	160		0h 28m	d
	710	9	78.9	130	160	191		13m 9s	14m 28s	15m 47s	12.8		30s	-	130	160	191		0h 34m	d
	710	7.4	95.9	153	190	226		15m 59s	17m 35s	19m 11s	15.4		35s	-	153	190	226		0h 41m	d
800	800	41	19.5	40	49	59	0 - DRAG ONLY	3m 15s	3m 35s	3m 54s	3.9		12s	-	40	49	59		0h 8m	d
	800	33	24.2	49	61	72		4m 2s	4m 27s	4m 51s	4.6		12s	-	49	61	72		0h 10m	d
	800	26	30.8	62	76	91		5m 8s	5m 38s	6m 9s	5.6		16s	-	62	76	91		0h 13m	d
	800	21	38.1	76	94	112		6m 21s	6m 59s	7m 37s	6.7		20s	-	76	94	112		0h 16m	d
	800	17	47.1	92	114	136		7m 51s	8m 38s	9m 25s	8.1		20s	-	92	114	136		0h 20m	d
	800	13.6	58.8	113	140	167		9m 48s	10m 47s	11m 46s	9.8		25s	-	113	140	167		0h 25m	d
	800	11	72.7	138	170	203		12m 7s	13m 20s	14m 33s	11.9		30s	-	138	170	203		0h 31m	d
	800	9	88.9	165	204	243		14m 49s	16m 18s	17m 47s	14.3		30s	-	165	204	243		0h 38m	d
	800	7.4	108.1	195	241	287		18m 1s	19m 49s	21m 37s	17.2		35s	-	195	241	287		0h 46m	d
900	900	41	22.0	50	62	74	0 - DRAG ONLY	3m 40s	4m 1s	4m 23s	4.3		12s	-	50	62	74		0h 9m	d
	900	33	27.3	62	77	91		4m 33s	5m 0s	5m 27s	5.1		16s	-	62	77	91		0h 12m	d
	900	26	34.6	78	97	115		5m 46s	6m 21s	6m 55s	6.2		16s	-	78	97	115		0h 15m	d
	900	21	42.9	96	118	141		7m 9s	7m 51s	8m 34s	7.4		20s	-	96	118	141		0h 18m	d
	900	17	52.9	117	144	172		8m 49s	9m 42s	10m 35s	8.9		25s	-	117	144	172		0h 23m	d
	900	13.6	66.2	144	178	212		11m 2s	12m 8s	13m 14s	10.9		25s	-	144	178	212		0h 28m	d
	900	11	81.8	174	216	257		13m 38s	15m 0s	16m 22s	13.3		30s	-	174	216	257		0h 35m	d
	900	9	100.0	208	258	307		16m 40s	18m 20s	20m 0s	16.0		35s	-	208	258	307		0h 43m	d
	900	7.4	121.6	246	305	364		20m 16s	22m 18s	24m 19s	19.2		35s	-	246	305	364		0h 52m	d
1000	1000	41	24.4	62	77	91	0 - DRAG ONLY	4m 4s	4m 28s	4m 53s	4.7		12s	-	62	77	91		0h 10m	d
	1000	33	30.3	76	95	113		5m 3s	5m 33s	6m 4s	5.5		16s	-	76	95	113		0h 13m	d
	1000	26	38.5	96	119	142		6m 25s	7m 3s	7m 42s	6.8		20s	-	96	119	142		0h 17m	d
	1000	21	47.6	118	146	174		7m 56s	8m 44s	9m 31s	8.1		20s	-	118	146	174		0h 20m	d
	1000	17	58.8	144	178	213		9m 48s	10m 47s	11m 46s	9.8		25s	-	144	178	213		0h 25m	d
	1000	13.6	73.5	177	220	262		12m 15s	13m 29s	14m 42s	12.0		30s	-	177	220	262		0h 32m	d
	1000	11	90.9	215	266	318		15m 9s	16m 40s	18m 11s	14.6		35s	-	215	266	318		0h 39m	d
	1000	9	111.1	257	318	379		18m 31s	20m 22s	22m 13s	17.7		35s	-	257	318	379		0h 48m	d
	1000	7.4	135.1	304	377	449		22m 31s	24m 46s	27m 2s	21.3		35s	-	304	377	449		0h 58m	d
1100	1100	41	26.8	75	93	111	0 - DRAG ONLY	4m 28s	4m 55s	5m 22s	5.0		16s	-	75	93	111		0h 12m	d
	1100	33	33.3	93	115	137		5m 33s	6m 7s	6m 40s	6.0		16s	-	93	115	137		0h 14m	d
	1100	26	42.3	116	144	172		7m 3s	7m 45s	8m 28s	7.3		20s	-	116	144	172		0h 18m	d
	1100	21	52.4	143	177	211		8m 44s	9m 36s	10m 29s	8.9		25s	-	143	177	211		0h 23m	d
	1100	17	64.7	174	216	257		10m 47s	11m 52s	12m 56s	10.7		25s	-	174	216	257		0h 28m	d
	1100	13.6	80.9	215	266	317		13m 29s	14m 50s	16m 11s	13.1		30s	-	215	266	317		0h 35m	d
	1100	11	100.0	260	322	384		16m 40s	18m 20s	20m 0s	16.0		35s	-	260	322	384		0h 43m	d
	1100	9	122.2	311	385	459		20m 22s	22m 24s	24m 27s	19.3		35s	-	311	385	459		0h 53m	d
	1100	7.4	148.6	368	456	543		24m 46s	27m 15s	29m 44s	23.3		35s	-	368	456	543		1h 4m	d
1200	1200	41	29.3	89	110	132	0 - DRAG ONLY	4m 53s	5m 22s	5m 51s	5.4		16s	-	89	110	132		0h 13m	d
	1200	33	36.4	110	136	163		6m 4s	6m 40s	7m 16s	6.5		16s	-	110	136	163		0h 16m	d
	1200	26	46.2	139	172	205		7m 42s	8m 28s	9m 14s	7.9		20s	-	139	172	205		0h 20m	d
	1200	21	57.1	170	210	251		9m 31s	10m 29s	11m 26s	9.6		25s	-	170	210	251		0h 25m	d
	1200	17	70.6	207	257	306		11m 46s	12m 56s	14m 7s	11.6		30s	-	207	257	306		0h 30m	d
	1200	13.6	88.2	255	316	377		14m 42s	16m 11s	17m 39s	14.2		30s	-	255	316	377		0h 38m	d
	1200	11	109.1	310	383	457		18m 11s	20m 0s	21m 49s	17.4		35s	-	310	383	457		0h 47m	d
	1200	9	133.3	370	458	546		22m 13s	24m 27s	26m 40s	21.0		35s	-	370	458	546		0h 57m	d
	1200	7.4	162.2	438	542	647		27m 2s	29m 44s	32m 26s	25.3		35s	-	438	542	647		1h 10m	d

RIYANG™ INSPIRED BY FUSION WELDING Model V1200 (630mm - 1200mm) Ram (mm²): 5070.0 Paramater: Single Low Pressure (ISO21307:2017)

TEMP: 225 ± 10C			PHASE 1				PHASE 2				PHASE 3	PHASE 4				PHASE 5	PHASE 6
Pipe Details (e_n = Wall Thickness)			Bead Up Pressure (BAR) ADD DRAG (see note a)			Minimum Bead up Size	Heat Soak See Note b 0 - DRAG ONLY				Maximum Heater Removal Time	Maximum Pressure Up Time	Weld Pressure (BAR) ADD DRAG			Minimim Cool Time Under Pressure (See Note c)	Additional Cool Time out of Machine (See Note d)
			P1			t1	P2	t2			t3	t4	P3			t5 / P3	
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Min	Tgt	Max			Min	Tgt	Max		
630	41	15.4	9	10	11	3	0 - DRAG ONLY	3m 4s	3m 27s	3m 50s	10s	21.9s	9	10	11	0h 18m	d
	33	19.1	11	12	14	3		3m 49s	4m 18s	4m 46s	12s	21.9s	11	12	14	0h 16m	d
	26	24.2	14	15	17	3		4m 51s	5m 27s	6m 3s	12s	21.9s	14	15	17	0h 17m	d
	21	30.0	17	19	21	4		6m 0s	6m 45s	7m 30s	16s	21.9s	17	19	21	0h 19m	d
	17	37.1	20	23	26	5		7m 25s	8m 20s	9m 16s	20s	21.9s	20	23	26	0h 23m	d
	13.6	46.3	25	28	32	6		9m 16s	10m 25s	11m 35s	20s	21.9s	25	28	32	0h 30m	d
	11	57.3	30	35	39	7		11m 27s	12m 53s	14m 19s	25s	21.9s	30	35	39	0h 42m	d
	9	70.0	36	41	46	8		14m 0s	15m 45s	17m 30s	25s	21.9s	36	41	46	1h 1m	d
	7.4	85.1	43	49	55	10		17m 2s	19m 9s	21m 17s	30s	21.9s	43	49	55	1h 29m	d
710	41	17.3	11	13	14	3	0 - DRAG ONLY	3m 28s	3m 54s	4m 20s	10s	24.3s	11	13	14	0h 20m	d
	33	21.5	14	16	17	3		4m 18s	4m 50s	5m 23s	12s	24.3s	14	16	17	0h 17m	d
	26	27.3	17	20	22	4		5m 28s	6m 9s	6m 50s	16s	24.3s	17	20	22	0h 18m	d
	21	33.8	21	24	27	4		6m 46s	7m 36s	8m 27s	16s	24.3s	21	24	27	0h 21m	d
	17	41.8	26	29	33	5		8m 21s	9m 24s	10m 26s	20s	24.3s	26	29	33	0h 27m	d
	13.6	52.2	32	36	40	6		10m 26s	11m 45s	13m 3s	25s	24.3s	32	36	40	0h 36m	d
	11	64.5	39	44	49	7		12m 55s	14m 31s	16m 8s	25s	24.3s	39	44	49	0h 52m	d
	9	78.9	46	52	59	9		15m 47s	17m 45s	19m 43s	30s	24.3s	46	52	59	1h 16m	d
	7.4	95.9	55	62	69	11		19m 11s	21m 35s	23m 59s	35s	24.3s	55	62	69	1h 53m	d
800	41	19.5	14	16	18	3	0 - DRAG ONLY	3m 54s	4m 23s	4m 53s	12s	27s	14	16	18	0h 17m	d
	33	24.2	17	20	22	3		4m 51s	5m 27s	6m 4s	12s	27s	17	20	22	0h 17m	d
	26	30.8	22	25	28	4		6m 9s	6m 55s	7m 42s	16s	27s	22	25	28	0h 20m	d
	21	38.1	27	31	34	5		7m 37s	8m 34s	9m 31s	20s	27s	27	31	34	0h 24m	d
	17	47.1	33	37	42	6		9m 25s	10m 35s	11m 46s	20s	27s	33	37	42	0h 31m	d
	13.6	58.8	41	46	51	7		11m 46s	13m 14s	14m 42s	25s	27s	41	46	51	0h 44m	d
	11	72.7	49	56	62	8		14m 33s	16m 22s	18m 11s	30s	27s	49	56	62	1h 5m	d
	9	88.9	59	67	74	10		17m 47s	20m 0s	22m 13s	30s	27s	59	67	74	1h 37m	d
	7.4	108.1	70	79	88	12		21m 37s	24m 19s	27m 2s	35s	27s	70	79	88	2h 24m	d
900	41	22.0	18	20	23	3	0 - DRAG ONLY	4m 23s	4m 56s	5m 29s	12s	30s	18	20	23	0h 17m	d
	33	27.3	22	25	28	4		5m 27s	6m 8s	6m 49s	16s	30s	22	25	28	0h 18m	d
	26	34.6	28	32	35	4		6m 55s	7m 47s	8m 39s	16s	30s	28	32	35	0h 22m	d
	21	42.9	34	39	43	5		8m 34s	9m 39s	10m 43s	20s	30s	34	39	43	0h 27m	d
	17	52.9	42	47	53	6		10m 35s	11m 55s	13m 14s	25s	30s	42	47	53	0h 37m	d
	13.6	66.2	51	58	65	8		13m 14s	14m 53s	16m 33s	25s	30s	51	58	65	0h 55m	d
	11	81.8	62	71	79	9		16m 22s	18m 25s	20m 27s	30s	30s	62	71	79	1h 22m	d
	9	100.0	74	84	94	11		20m 0s	22m 30s	25m 0s	35s	30s	74	84	94	2h 3m	d
	7.4	121.6	88	100	111	13		24m 19s	27m 22s	30m 24s	35s	30s	88	100	111	3h 5m	d
1000	41	24.4	22	25	28	3	0 - DRAG ONLY	4m 53s	5m 29s	6m 6s	12s	33s	22	25	28	0h 17m	d
	33	30.3	27	31	35	4		6m 4s	6m 49s	7m 35s	16s	33s	27	31	35	0h 20m	d
	26	38.5	34	39	44	5		7m 42s	8m 39s	9m 37s	20s	33s	34	39	44	0h 24m	d
	21	47.6	42	48	53	6		9m 31s	10m 43s	11m 54s	20s	33s	42	48	53	0h 32m	d
	17	58.8	51	58	65	7		11m 46s	13m 14s	14m 42s	25s	33s	51	58	65	0h 44m	d
	13.6	73.5	63	72	80	8		14m 42s	16m 33s	18m 23s	30s	33s	63	72	80	1h 7m	d
	11	90.9	77	87	97	10		18m 11s	20m 27s	22m 44s	35s	33s	77	87	97	1h 41m	d
	9	111.1	92	104	116	12		22m 13s	25m 0s	27m 47s	35s	33s	92	104	116	2h 33m	d
	7.4	135.1	109	123	138	15		27m 2s	30m 24s	33m 47s	35s	33s	109	123	138	3h 50m	d
1100	41	26.8	27	30	34	4	0 - DRAG ONLY	5m 22s	6m 2s	6m 42s	16s	36s	27	30	34	0h 18m	d
	33	33.3	33	37	42	4		6m 40s	7m 30s	8m 20s	16s	36s	33	37	42	0h 21m	d
	26	42.3	42	47	53	5		8m 28s	9m 31s	10m 35s	20s	36s	42	47	53	0h 27m	d
	21	52.4	51	58	65	6		10m 29s	11m 47s	13m 6s	25s	36s	51	58	65	0h 37m	d
	17	64.7	62	71	79	7		12m 56s	14m 34s	16m 11s	25s	36s	62	71	79	0h 52m	d
	13.6	80.9	77	87	97	9		16m 11s	18m 12s	20m 13s	30s	36s	77	87	97	1h 20m	d
	11	100.0	93	105	118	11		20m 0s	22m 30s	25m 0s	35s	36s	93	105	118	2h 3m	d
	9	122.2	111	126	141	13		24m 27s	27m 30s	30m 33s	35s	36s	111	126	141	3h 7m	d
	7.4	148.6	131	149	166	16		29m 44s	33m 27s	37m 10s	35s	36s	131	149	166	4h 42m	d
1200	41	29.3	32	36	40	4	0 - DRAG ONLY	5m 51s	6m 35s	7m 19s	16s	39s	32	36	40	0h 19m	d
	33	36.4	39	45	50	5		7m 16s	8m 11s	9m 5s	16s	39s	39	45	50	0h 23m	d
	26	46.2	49	56	63	6		9m 14s	10m 23s	11m 32s	20s	39s	49	56	63	0h 30m	d
	21	57.1	61	69	77	7		11m 26s	12m 51s	14m 17s	25s	39s	61	69	77	0h 42m	d
	17	70.6	74	84	94	8		14m 7s	15m 53s	17m 39s	30s	39s	74	84	94	1h 2m	d
	13.6	88.2	91	103	115	10		17m 39s	19m 51s	22m 4s	30s	39s	91	103	115	1h 35m	d
	11	109.1	111	125	140	12		21m 49s	24m 33s	27m 16s	35s	39s	111	125	140	2h 27m	d
	9	133.3	132	150	167	14		26m 40s	30m 0s	33m 20s	35s	39s	132	150	167	3h 44m	d
	7.4	162.2	156	177	198	17		32m 26s	36m 29s	40m 32s	35s	39s	156	177	198	5h 38m	d

RIYANG INSPIRED BY FUSION WELDING

Model V1200 (630mm - 1200mm) Ram (mm²): 5070 Parameter: DVS 2207-11:2017 (PP)

TEMP: 210 ± 10C			PHASE 1				PHASE 2		PHASE 3	PHASE 4				PHASE 5		
Pipe Details (e_n = Wall Thickness) Max e_n = 70mm			Equalising				Preheating		Changeover Time	Joining (See Note a)				Minimim Cool Time Under Pressure (See Note b)		
			Equalising Pressure BAR			Bead Height (Minimum)				Buildup Time	Joining Pressure BAR			Up to 15°C	15°C to 25°C	25°C to 40°C
D_n	SDR	e_n	Min	Tgt	Max	mm	BAR	Time	Max	Max	Min	Tgt	Max			
630	41	15.4	5	6	7	1.0	0.59	2m 46s	7.9s	13.6s	5	6	7	0h 12m	0h 15m	0h 19m
	33	19.1	7	7	8	1.5	0.73	3m 26s	9s	17s	7	7	8	0h 14m	0h 18m	0h 24m
	26	24.2	8	9	10	1.5	0.91	4m 13s	10.5s	20.6s	8	9	10	0h 18m	0h 22m	0h 30m
	21	30.0	10	11	12	2.0	1.12	5m 4s	12.1s	25.7s	10	11	12	0h 22m	0h 28m	0h 37m
	17	37.1	12	14	15	2.5	1.37	6m 2s	14s	32s	12	14	15	0h 27m	0h 34m	0h 45m
	13.6	46.3	15	17	19	2.5	1.68	7m 3s	16.1s	39.7s	15	17	19	0h 33m	0h 42m	0h 56m
	11	57.3	18	20	22	3.0	2.04	8m 4s	18.8s	43s	18	20	22	0h 41m	0h 52m	1h 9m
	9	70.0	22	24	27	3.0	2.43	9m 6s	22s	43s	22	24	27	0h 50m	1h 4m	1h 25m
710	41	17.3	7	8	8	1.0	0.75	3m 6s	8.5s	15.3s	7	8	8	0h 13m	0h 16m	0h 22m
	33	21.5	8	9	10	1.5	0.92	3m 49s	9.8s	18.8s	8	9	10	0h 16m	0h 20m	0h 27m
	26	27.3	10	12	13	2.0	1.16	4m 39s	11.3s	23s	10	12	13	0h 20m	0h 25m	0h 33m
	21	33.8	13	14	16	2.0	1.42	5m 33s	13.1s	28.9s	13	14	16	0h 25m	0h 31m	0h 41m
	17	41.8	16	17	19	2.5	1.73	6m 33s	15.1s	35.9s	16	17	19	0h 30m	0h 38m	0h 51m
	13.6	52.2	19	21	24	3.0	2.13	7m 40s	17.5s	43s	19	21	24	0h 37m	0h 48m	1h 3m
	11	64.5	23	26	28	3.0	2.59	8m 40s	20.7s	43s	23	26	28	0h 46m	0h 59m	1h 18m
800	41	19.5	9	10	10	1.5	0.95	3m 31s	9.2s	17.4s	9	10	10	0h 14m	0h 19m	0h 25m
	33	24.2	11	12	13	1.5	1.17	4m 13s	10.5s	20.6s	11	12	13	0h 18m	0h 22m	0h 30m
	26	30.8	13	15	16	2.0	1.47	5m 8s	12.3s	26.1s	13	15	16	0h 22m	0h 28m	0h 37m
	21	38.1	16	18	20	2.5	1.80	6m 9s	14.3s	32.9s	16	18	20	0h 28m	0h 35m	0h 46m
	17	47.1	20	22	24	2.5	2.20	7m 10s	16.4s	40.5s	20	22	24	0h 34m	0h 43m	0h 57m
	13.6	58.8	24	27	30	3.0	2.71	8m 11s	19.2s	43s	24	27	30	0h 42m	0h 54m	1h 11m
900	41	22.0	11	12	13	1.5	1.20	3m 49s	9.8s	18.8s	11	12	13	0h 16m	0h 20m	0h 27m
	33	27.3	13	15	16	2.0	1.48	4m 39s	11.3s	23s	13	15	16	0h 20m	0h 25m	0h 33m
	26	34.6	17	19	21	2.0	1.86	5m 41s	13.4s	29.8s	17	19	21	0h 25m	0h 32m	0h 42m
	21	42.9	21	23	25	2.5	2.28	6m 39s	15.3s	36.7s	21	23	25	0h 31m	0h 39m	0h 52m
	17	52.9	25	28	31	3.0	2.78	7m 42s	17.7s	43s	25	28	31	0h 38m	0h 48m	1h 4m
	13.6	66.2	31	34	38	3.0	3.42	8m 47s	21s	43s	31	34	38	0h 47m	1h 0m	1h 20m
1000	41	24.4	13	15	16	1.5	1.48	4m 13s	10.5s	20.6s	13	15	16	0h 18m	0h 22m	0h 30m
	33	30.3	16	18	20	2.0	1.83	5m 4s	12.1s	25.7s	16	18	20	0h 22m	0h 28m	0h 37m
	26	38.5	21	23	25	2.5	2.30	6m 9s	14.3s	32.9s	21	23	25	0h 28m	0h 35m	0h 46m
	21	47.6	25	28	31	2.5	2.82	7m 13s	16.5s	40.9s	25	28	31	0h 34m	0h 44m	0h 58m
	17	58.8	31	34	38	3.0	3.44	8m 11s	19.2s	43s	31	34	38	0h 42m	0h 54m	1h 11m
1100	41	26.8	16	18	20	2.0	1.79	4m 35s	11.2s	22.5s	16	18	20	0h 19m	0h 25m	0h 33m
	33	33.3	20	22	24	2.0	2.21	5m 29s	13s	28.4s	20	22	24	0h 24m	0h 30m	0h 40m
	26	42.3	25	28	31	2.5	2.78	6m 36s	15.2s	36.3s	25	28	31	0h 31m	0h 39m	0h 51m
	21	52.4	31	34	38	3.0	3.41	7m 40s	17.5s	43s	31	34	38	0h 37m	0h 48m	1h 3m
	17	64.7	37	42	46	3.0	4.16	8m 40s	20.7s	43s	37	42	46	0h 46m	0h 59m	1h 18m
1200	41	29.3	19	21	23	2.0	2.13	4m 56s	11.9s	24.8s	19	21	23	0h 21m	0h 27m	0h 36m
	33	36.4	24	26	29	2.0	2.63	5m 54s	13.8s	31.1s	24	26	29	0h 26m	0h 33m	0h 44m
	26	46.2	30	33	36	2.5	3.30	7m 3s	16.1s	39.7s	30	33	36	0h 33m	0h 42m	0h 56m
	21	57.1	37	41	45	3.0	4.05	8m 4s	18.8s	43s	37	41	45	0h 41m	0h 52m	1h 9m

RIYANG™
INSPIRED BY FUSION WELDING

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