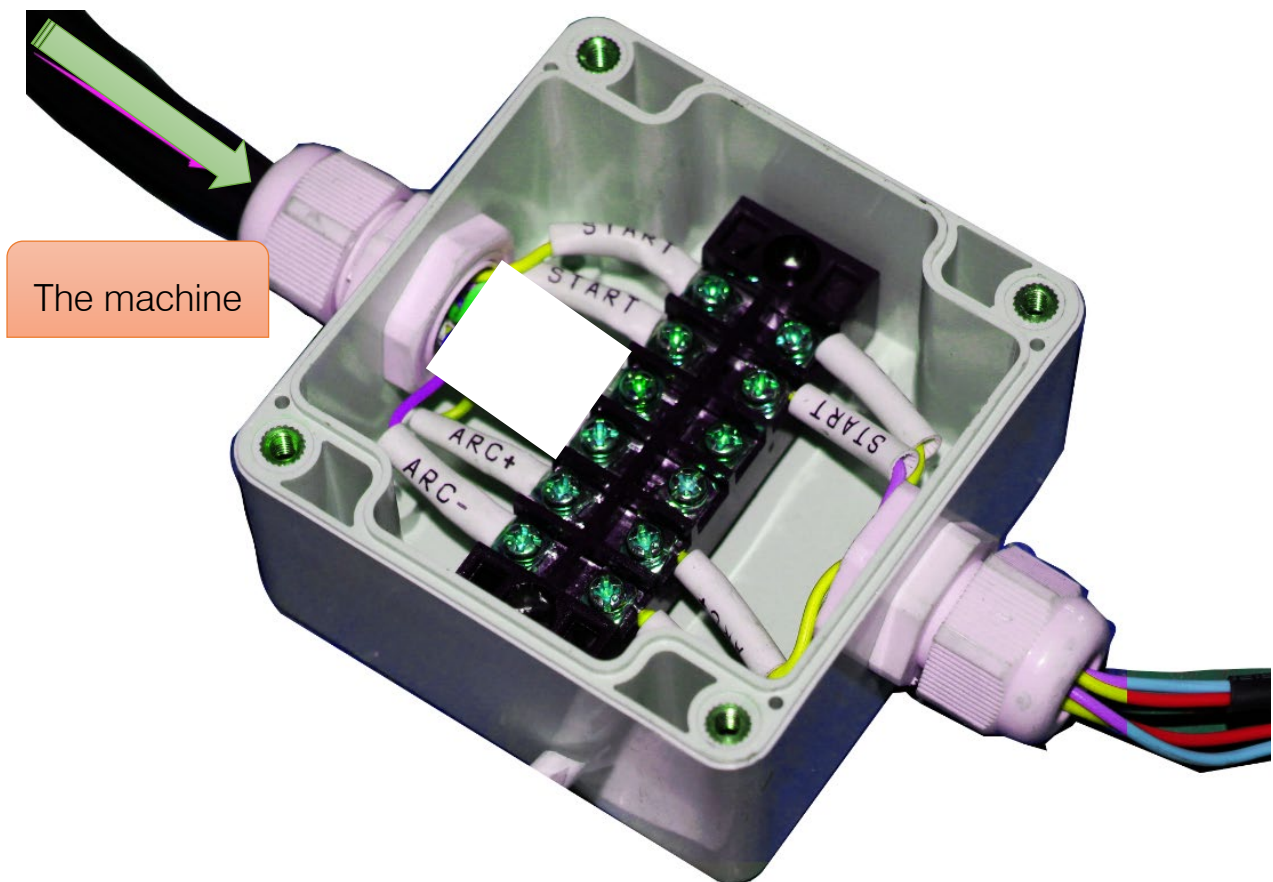# How to connect Powermax45 XP with Tube-S&Tube-mini

◆ The Powermax45 XP connect to Tube-S&Tube-mini, 4 wires need to be connected.

◆ The Machine connect terminal:

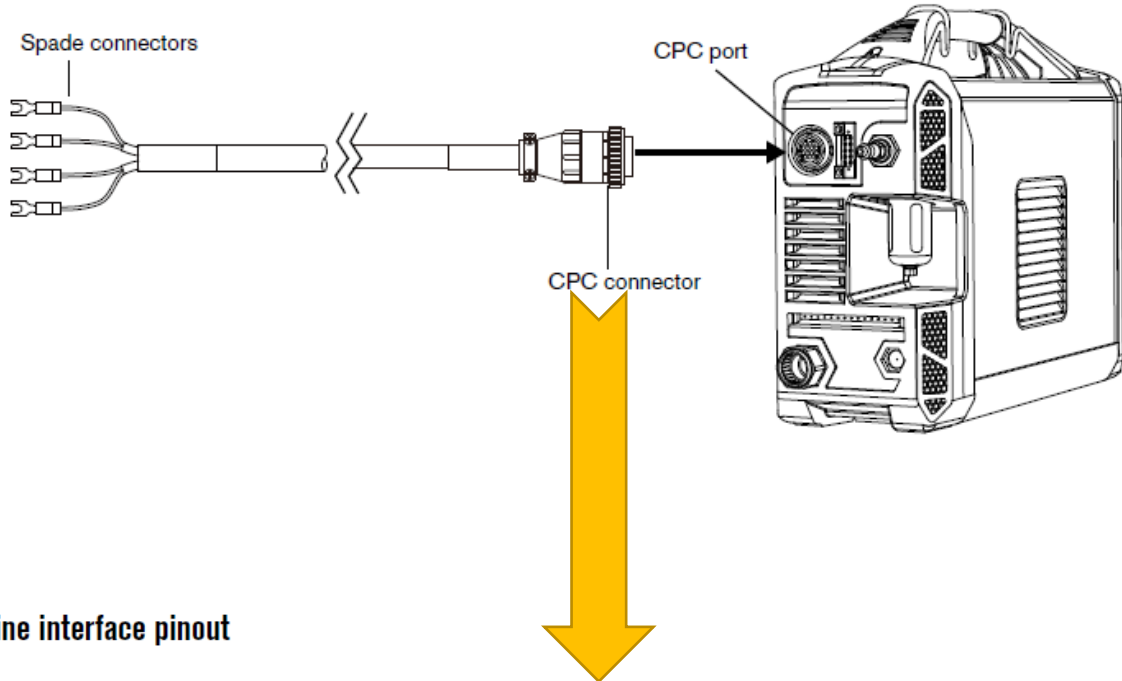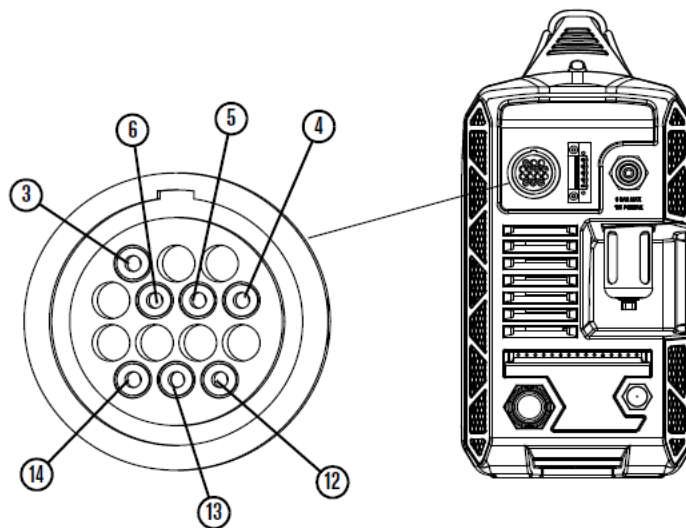| Machine	Aviation plug	Terminal No.	Description
Tube-S&Tube-mini connect terminal	2-core	START	The CNC plasma arc initiation signal
		START	
	2-core	ARC+	The CNC arc voltage signal
		ARC-	

The machine

◆ POWERMAX45 XP connect terminal:

Note: The customer needs to connect the power cable according to the actual plasma models.

Machine interface pinout

The following figure shows the connector sockets for each type of signal available through the machine interface cable.
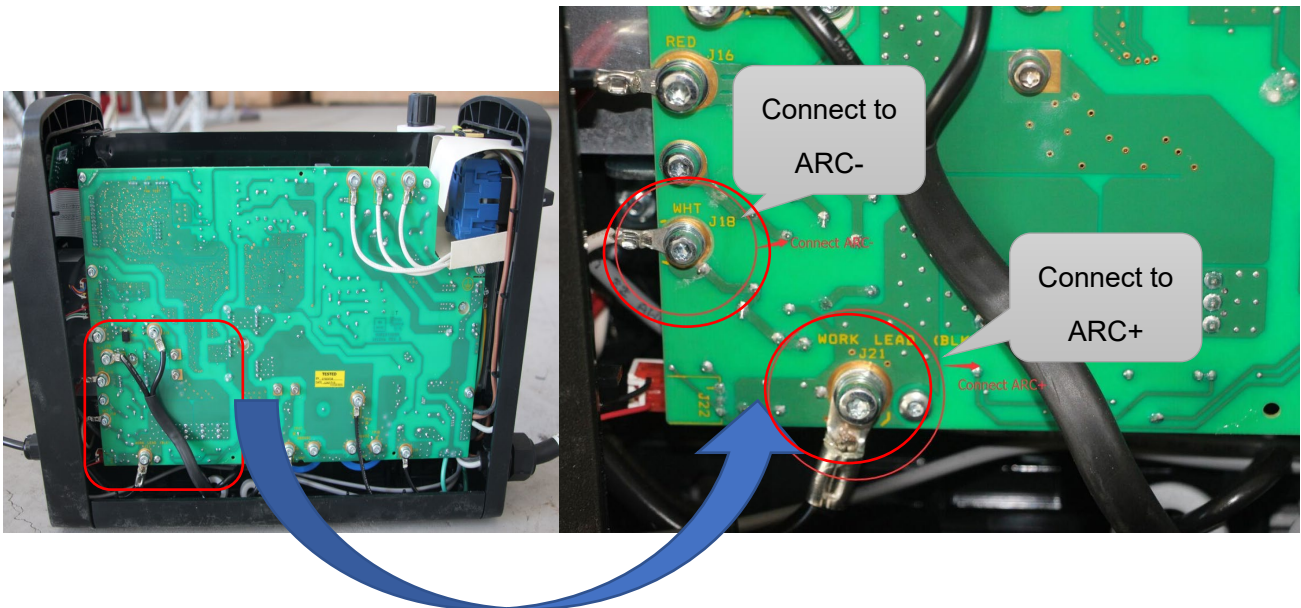

Plasma interface signals:

Machine interface cable signals

Refer to the following table for the cable signal details when connecting the power supply to a torch height controller or CNC controller with a machine interface cable.

Signal	Type	Notes	Connector sockets	External cable wires	Internal cable wires
Start (start plasma)	Input	Normally open. 15 VDC open circuit voltage at START terminals. Requires dry contact closure to activate.	3	Green	Black
			4	Black	Red
Transfer (start machine motion)	Output	Normally open. Dry contact closure when the arc transfers. 120 VAC / 1 A maximum at the machine interface relay.	12	Red	White
			14	Black	Green
Voltage divider	Output	Divided arc signal of 20:1, 21.1:1, 30:1, 40:1, 50:1 (provides a maximum of 16 V).	5 (-)	Black (-)	Black (-)
			6 (+)	White (+)	Red (+)
Ground	Ground		13		Green/yellow

NOTES 1: Positive electrode (work J21) of Plasma power is connected the ground wire. and check it by multimeter. If 【work J21】 is not connected the ground wire, please find the other port.

Negative electrode(WHT J18) of Plasma power is connected the plasma torch. and check it by multimeter; If 【WHT J18】 is not connected the ground wire, please find the other port.

◆ Cable connecting method:

	Terminal No.	Corresponding interface of POWERMAX45 XP	The interface position
Tube-S&Tube-mini connect terminal	START	3 Input Start	POWERMAX45 XP Interface
	START	4 Input Start	
	ARC+	Positive electrode (work J21)	
	ARC-	Negative electrode(WHT J18)	

◆ Connect the machine to the plasma signal with terminal blocks:

Machine Signal

Plasma Signal