



# Welding Digital Solutions

## InduSuite

Introduced by  
**Ahmed Hamed Mahmoud**  
Specialized Welding Engineer

### Challenges affecting our industry



Low productivity



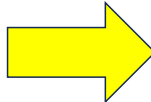
Cost control



Quality & Traceability



Access to competence



### Management on welding production



PRODUCTIVITY



CONSUMPTION



WELD SESSIONS



DOCUMENTATION

# InduSuite

Simplicity

Insight

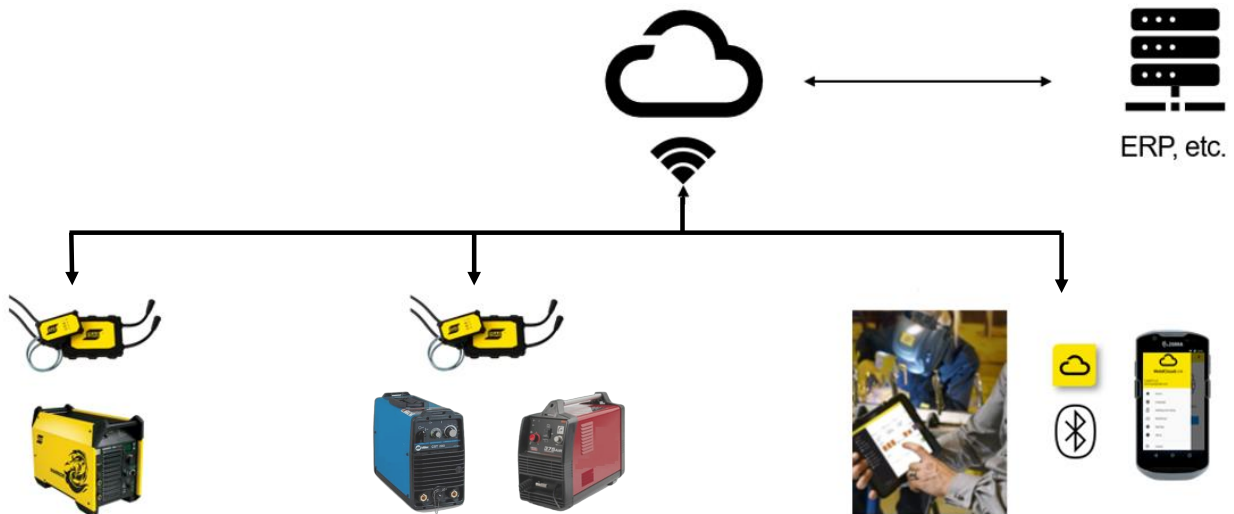
Control

The universal collection of welding and cutting software applications that connects data, machinery, and processes to...

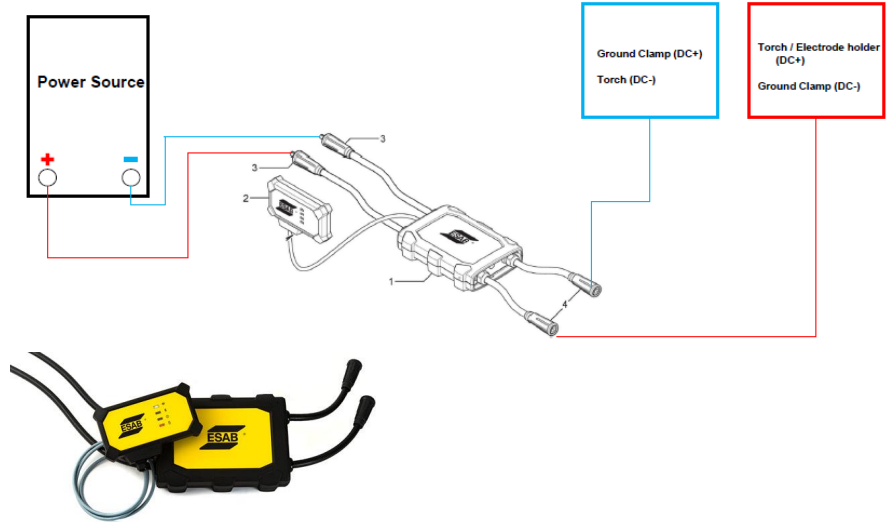
**Unlock your shop's true potential**



## InduSuite | Architecture



## WeldCloud Universal Connector



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## Data Collected to Indusuite

### ➤ Manual inputs "Universal connector" :

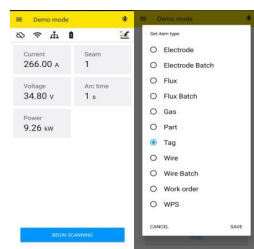
- Voltage.
- Current.
- Power.
- Arc ON – time.

### ➤ Automatically calculated by InduSuite :

- Heat input
- Net deposition rate.
- Filler material consumption.

### ➤ Manual inputs "WeldCloud Link" :

- Gas type.
- Parts
- Wire.
- Work Order.
- WPS.
- Welders
- etc,



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**NDT<sup>X</sup>**  
CAIRO EXPO 2024

NDT-X CAIRO 2024 TECHNICAL CONFERENCE

## InduSuite - WeldCloud Apps



Notes



Productivity



Fleet



Assembly

 InduSuite

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# Indusuite | Notes



**How it works?**

WeldCloud Notes aids in pre-production, production, and post-production phases.

**Main End-User:**

- Production, Operation managers and QA/QC.

**Infrastructure:**



**Features & Benefits:**

- Generate (Documentation) “into a PDF or Excel” .
  - pWPS
  - PQRs
  - WPSs
  - WPQs.
- **Q-matrix**, mapping, filtering,
- Fast and efficient **weld-book**.

# MANAGE ALL YOUR WELDING DOCUMENTATION IN ONE PLACE

## PQRs / WPSs

- ✓ Quickly create a WPS from one or multiple PQRs.
- ✓ Decrease the time to create your welding documents compared to traditional methods (PDF, Excel, ...).

PRELIMINARY WELDING PROCEDURE SPECIFICATION / ESAB						Client / :
<b>Customer #1</b>						/
BASIC INFORMATION						
PQR #	/	Standard	ASME IX	Product Type	Plate	
Weld Type	FW - T-Joint	Welding Processes	Process 1 GTAW Manual	Process 2 GTAW Semi-automatic	Process 3	/
BASE MATERIAL DETAILS (QW-492 & QW-493)						
Base Materials	1. SA 182 F316L D N/A (mm), T 10 - 12 (mm)		2. SA 182 F316L D N/A (mm), T 10 - 12 (mm)		W. Thickness (mm)	10 - 12
Group	P8 Gr1 P8 Gr1	Welding Positions	GTAW #1 2G+3G+4G (Up/hi)	GTAW #2 2G+3G+4G (Up/hi)	/	/ (/)
FILLER MATERIAL DETAILS (QW-494 & QW-496)						
[QW-494]	GTAW #1	GTAW #2	/	[QW-496]	GTAW #1	GTAW #2
Specification	SFA 5.9	SFA 5.9	/	Shielding	Gas - SG-A 100%	Gas - SG-AC 92-9%
Classification	ER316L	ER316L	/	Flow Rate (l/min)	/	16 - 18
Commercial Designation	/	/	/	Commercial Designation	/	/
Group	F6 A8	F6 A8	/	Backing Flow & Rate l/min	Material Backing /	
Diameter (mm)	2.4	1.2	/		GTAW #1	GTAW #2

JOINT DETAILS (QW-492)										
Preparation Method	Grinding, Machining	Throat (mm)	10 - 12	Weld Details	Multi layer + Single side, material backing					
GROOVE DESIGN		WELD LAYER CONFIGURATION								
Root Gap: 1 - 2 (mm) (R) / Root Face: 1 - 2 (mm) (F)		Groove Angle: 30.0 - 40.0° (A)								
WELDING PARAMETERS (QW-499)										
Pass #	Process	Filler Metal	Ø (mm)	Current (A)	Voltage (V)	Polarity	Wire Feed (m/min)	Speed (mm/min)	Transfer Mode	Heat Input (kJ/cm)
1	GTAW	ER316L	2.9325	150 - 200	12 - 14	/	/	90 - 120	/	0.72 - 1.12
2	GTAW	ER316L	150 - 200	15 - 18	/	/	150 - 200	/	/	0.68 - 1.44
/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/
ADDITIONAL DETAILS (QW-498)										
Electrode Type and #	GTAW #1	GTAW #2	/	Oscillation	/					
Stick out	GTAW #1	GTAW #2	/	Weaving	GTAW #1					
Backing/Backing Details	/	/	/	Touch Angle	/					
THERMAL PARAMETERS (QW-496 & QW-497)										
Pre Heat Temperature (°C)	/	Interpass Temperature (°C)	200.0 - 250.0		Post Heat Temperature (°C)	/				
Post Weld Heat Treatment	Time (h)	Temperature °C	/	Method	/	Heat / Cool Rate (°C)	/			
ADDITIONAL INFORMATION										
Notes	/									
Revision	0	Written By (24/04/2024)	Verified By (/)	Approved By (/)	Client Approval	Status				

The screenshot displays the NDT-X software interface. On the left is a navigation menu with options: Help Center, PQRs, Certificates, WPSs, Personnel, QMatrixes, Welding Book, Projects, Weld Sketches, Libraries, Companies, Archive, and Settings. The main area is divided into eight steps for creating documents: Step 1 (Create a Preliminary WPS), Step 2 (Create a PQR), Step 3 (Create a WPS from a Single PQR), Step 4 (Merge Multiple PQR into a single WPS), Step 5 (Create a WPQ), Step 7 (Create a Welding Book), and Step 8 (Create and Manage Projects). Each step includes a play button icon and a '+ New' button.

On the right, there is a 'Certificates' dropdown menu with options: Welder Certificates, Int. today, Int. 30 days, Int. expired (2), Ext. today, Ext. 30 days, and Ext. expired (1).

The central dashboard shows a 'Project Overview (19 Welds)' with a 'Current weld production state' gauge set to 100%. Below the gauge is a table for 'Project completion (by stage)':

Stage	Count	Percentage
Fit	4	20.0%
Welded	5	26.3%
Tested	3	15.8%
Processed	2	10.5%
<b>Total</b>	<b>19</b>	<b>100%</b>

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## Indusuite | Productivity

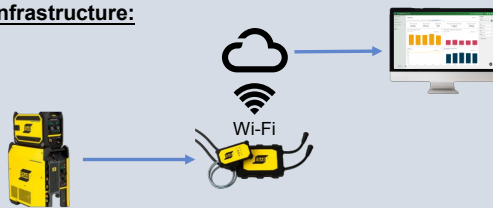
### How it works?

- Collects welding data.
- Identify quality issues by tracking parameters

### Main End-User :

- Production, Operation managers and QA/QC.

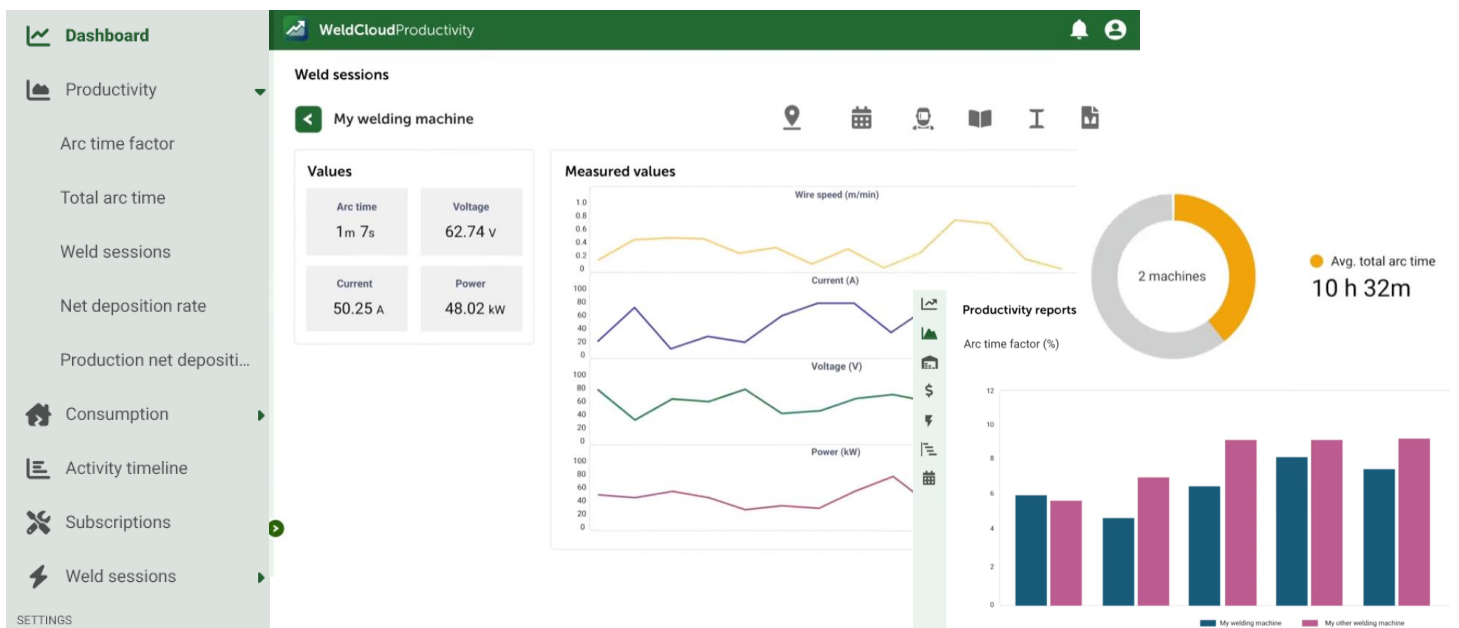
### Infrastructure:



### Features & Benefits:

#### Tracking :

- Arc-on time “ welding down to each weld session ”
- Number of weld sessions.
- Consumption rates “ wire and gas ”.
- Deposition rate.





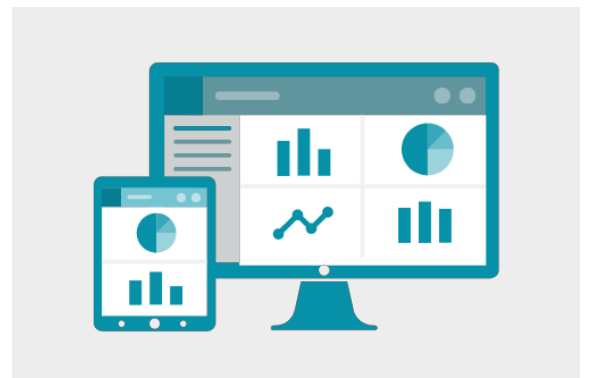
## Indusuite | Fleet



### Optimize your fleet management

Designed for fleet owners and service managers,

- Tracking for The **Equipment status**
  - ❑ Collect health data via cloud, (**Service log**).
- Manage your operator
- Instant notification **SMS, emails alerts**.
- Manage Present welding jobs across all your connected equipment.





**Dashboard**

- Machines & stations
- Reports and analysis
- Machine permissions
- Events
- Service
- Job management
- Firmware management

**SETTINGS**

- Machines & devices
- Personnel management

**Welding systems** 🟢 LIVE

### My welding machine

🟢 Online

**Weld information**

- 🔧
- 📄
- 🔧
- 📖

**Machine statistics**

Yesterday

- 🟢 Online 7h 2m
- 🟡 Arc on 5h 18m

**Service log**

- 🔄 Component change
- ⚡ Electrical safety test
- 🔧 Service
- 📅 Validation

**Events**

- ⚠️ Voltage out of limit
- ⚠️ High primary current
- ⚠️ No cooling water flow
- ⚠️ Lost messages

**Equipment**

- 🔌 Power source
- 🔌 Wire feeder
- 🖨️ Weld data unit

**Welding systems** 🟢 LIVE

Machine	Status	Events	Service log
My welding machine	🟢 Online	⚠️ Voltage out of limit	🔄 Component change
My other welding machine	🟡 Arc on	✅ No events	No planned activities
My welding machine 3	🟢 Online	✅ No events	No planned activities

**Job specification**

12.4 V	13.0 m/min
15.7 l/min	...

Send job to machines

## Indusuite | Assembly



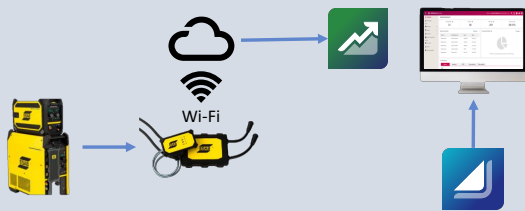
### How it works?

Joins (the qualifications documents from **WeldCloud Notes**) and (The Welding parameters from **WeldCloud Productivity**)

### Main End-User:

- Production, Operation managers AND QA/QC.

### Infrastructure:



### Features & Benefits:

the benefits of everything

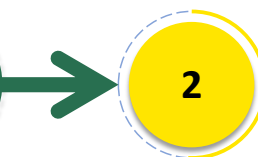
- From the moment to start to **Create the project.**
- **Tracking** welding sections, consumption rates.
- **Equipment health.**
- Merge all the documents: **WPSs, NDT and certificates.**
- Receiving SMS, Emails **reports** TO CHECK THE PROGRESS AND GIVE **APPROVES.**

## Indusuite workflow | Steps



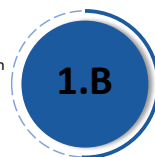
### Productivity

- Tracking arc time factor
- Productivity benchmarking
- Monitoring activity timeline
- Track consumption and HI\*



### Traceability

- Tracking joint variables by scanning (Consumables, WPS, Welder, Part)
- Benchmarking welders and operators
- Root cause analysis



### WeldCloud Assembly

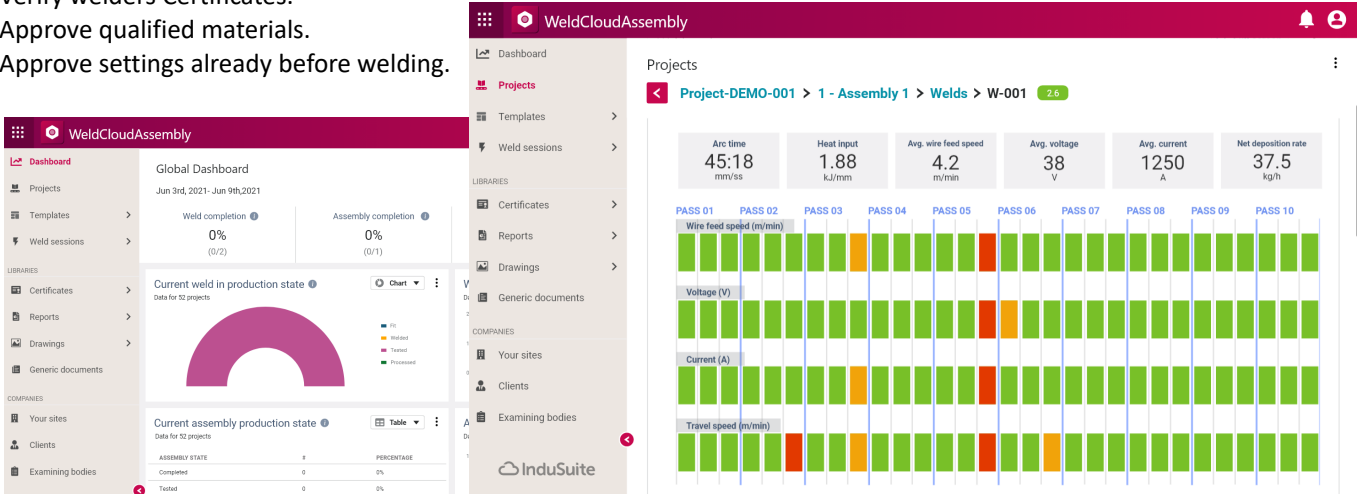


- Real time detection of WPS deviations
- Pre & Post-Weld compliance check
- Fully digitalized workflow
- Project panning compliance check

\*: with WeldCloud Mobile only

## Statistics and Analytics

- ✓ Full **traceability of projects** and components with actual weld parameters
- ✓ Get instant **notification** on weld non-compliances
- ✓ Verify welders Certificates.
- ✓ Approve qualified materials.
- ✓ Approve settings already before welding.



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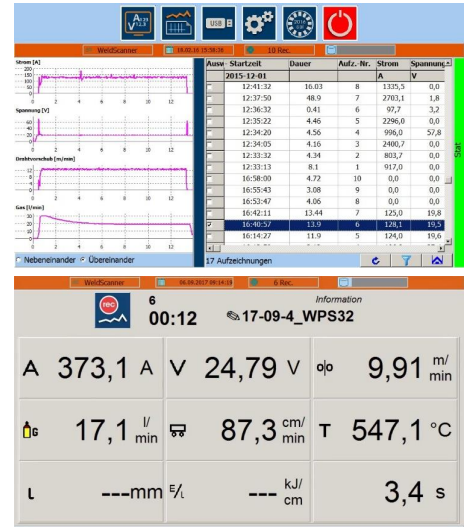
# HKS – Weld Scanner

**WeldScanner**  
Multi-talented recording device



- Designed and produced by **HKS Prozesstechnik** in Germany
- Multipurpose measuring device, usable as:

- Voltage.
- Current.
- Arc time.
- Heat Input.
- Gas flow



- **Data export through USB.**
- **Touch screen with curve progression that shows all welding parameters.**



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## Customers that are today using InduSuite



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**Thank You**

