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Proposal for Machine #11077

We are pleased to quote for you the following. Please note that these are approximate specifications only. We advise that you personally inspect this machine before purchasing it to verify the following information:

1- Used Cloos Track & Column Welding Cell

Model: QIROX Welding Robot QRC 350E

Specifications:
See next pages

Price FOB South Dakota..... \$550,000.00

NOTE: The seller does not accept any responsibility as to the safety devices required by OSHA. The seller also accepts no responsibility for providing UL approval on any electrical components and enclosures. The buyer accepts the responsibility to bring the machine up to OSHA and UL standards if required.

THE FOLLOWING TERMS AND CONDITIONS ARE A PART OF THIS PROPOSAL, CONDITIONS OF SALE: All quotations are subject to prior sale and subject to change without notice. Shipping dates are approx. only, and are further subject to delays because of labor difficulties, accidents, deliveries of parts and raw materials, acts of God or another cause beyond our control.

NON-CANCELLATION: Orders are not subject to cancellations except with our written consent. All transactions shall be a firm commitment, and any contrary clause contained in a customer's order shall be null and void.

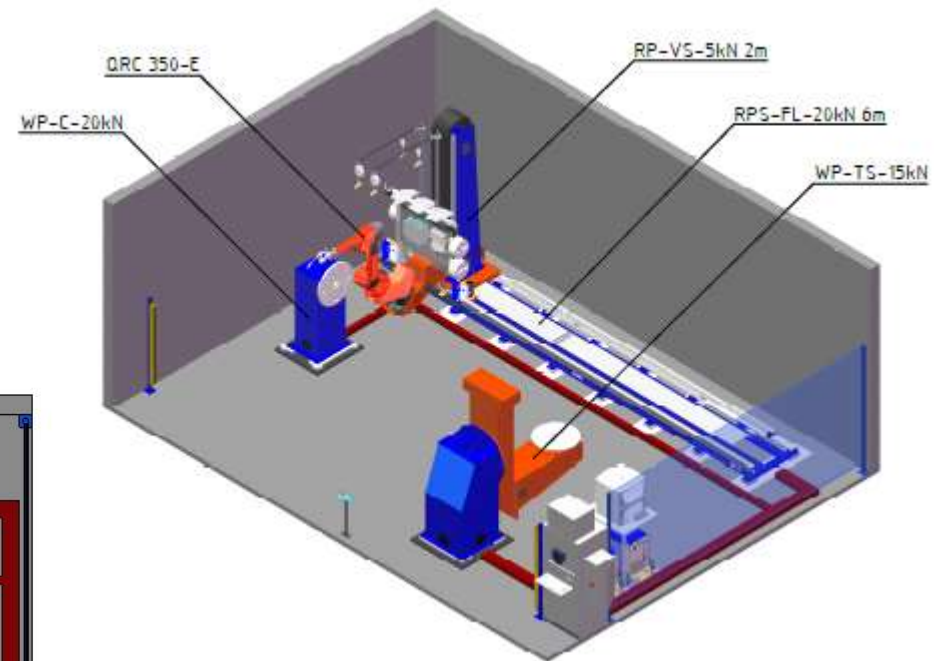
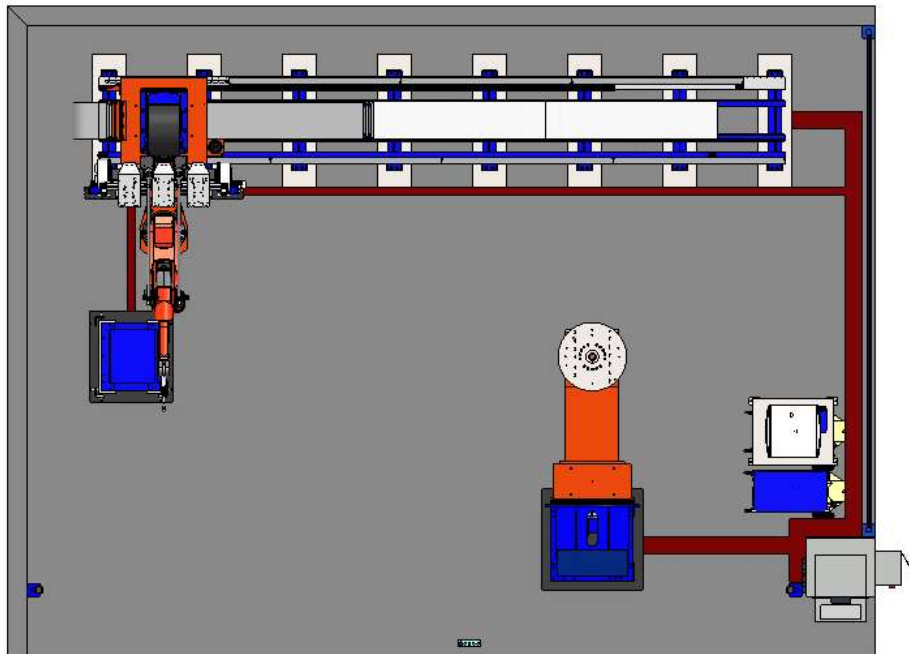
PRICES: Unless otherwise specified, prices are F.O.B., truck our plant: Orange City - New Machine, F.O.B., Factory with boxing or crating extra. Existing occupational tax and use taxes will be added to sale made where applicable.

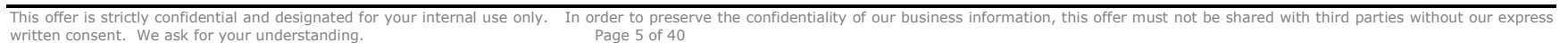
TERMS: One-Third cash down with order - Balance against shipping documents.

GUARANTEE: If the machine guaranteed by us does not prove satisfactory mechanically, the purchaser may return it freight prepaid within 30 days from date of shipment, and we will refund the purchase price in full. This does not apply to machines sold "as is" or "subject to inspection". We reserve the right to correct typographical errors. Machines purchased from third parties to fill customers' orders do not carry a warranty unless specifically given by the third party.

TABLE OF CONTENTS

BASIS OF QUOTATION	6
SUMMARY OF ROBOTIC WELDING SYSTEM	6
ROBOT TECHNOLOGY	6
WELDING TECHNOLOGY	9
POSITIONER.....	11
SAFETY TECHNOLOGY	12
SERVICES	13
TOTAL QUOTATION PRICE.....	13
COMMERCIAL AND TECHNICAL TERMS OF DELIVERY	15
TERMS OF DELIVERY	15
WARRANTY	15
TERMS OF PAYMENT	15
PRICES	15
SERVICES	16





Basis of Quotation

This quotation is based on the information received by the customer during various meetings and discussions with us (the supplier), and in connection with various documents, drawings and reports which have been shared between the parties.

Our quotation is limited by our knowledge of the facts as communicated to us by you. Any changes to those facts or the discovery of information not previously disclosed to us could impact the validity of this quotation, and my necessitate changes to this quotation.

Summary of Robotic Welding System

1	Robot Technology	Included
1	QIROX welding robot QRC 350-E max. load: working space with control incl. connecting cable with fixed connection incl. connecting cable with fixed connection Teach pendant with touchscreen with LED-backlight Connecting cable PHG as fiber optics integrated welding interface welding-software Digital in- and outputs serial interface CAN-Bus Keyboard USB-interfaces Flash memory Buffer module 24V Expandable up to 16 external axes big installation space for peripheral equipment	15kg Ø 4500mm QC 2 Advanced 5m 5m 8,4" 8m 16 2 8GB

1	PHG cable extended to	≥ V07 15m
1	Prepared for interface Qineo / Quinto II	
1	option 15" TFT display TOUCH for robot control	≥ V07
1	computer coupling QIROX Controller wiring between robot and PC is carried out by the customer or at cost	
1	I/O extension, pluggable 16 inputs/outputs	XA35
1	roof cooling unit 900W ETE	900W
1	Robot accessories changing system	

Software

1	MANAX station 1,3,5 max. 2 axes
1	MANAX station 2,4,6 max. 2 axes
1	parameter interpolation transfer between 2 parameter lists dependent on path
1	multi-layer processing
1	programmable weaving patterns
1	Soft Ref. programmable
1	parallel tasking in robot control
1	UMS User administration one robot via password
1	point editor in robot control

1	Software language English	
1	RoboPlan system modelling for compact and similar systems	Basic & Professional
1	Cloos Qirox Technology Interface (QTI) - Qirox Technology-Interface for Processes and devices - Programming of all parameters (Robot- Process- / device-parameter) with the teach pendant (PHG) of the robots - New Process - Tandem leading / following: -- Separate and flexible programming from the robot for the leading und following wire -- Automatic switching of the leading and following wire at direction reversal of the robot	

Sensorics

1	touch sensor Qineo touch sensor gas nozzle	60V
1	Connecting cable gas nozzle sensor Qineo	
1	arc sensor During welding the CLOOS arc sensor measures whether the torch position is actually following the programmed path. If any deviations occur due to heat distortion for example, the robot tracks the real contour.	
1	connection cable for arc sensor	≥ V05
1	Offline laser sensor iCSE LD internal cable management	
	Technical data	
	Measuring distance	400 mm
	measurement range	+/- 85 mm
	Horizontal field of view	50 µm
	Vertical field of view	110 µm
	Min. side height	1,0 mm

	Gap width min.	1,0 mm
	Max. tracking speed	300 cm/min
	Dimensions (mm)	D:100 H:43
	Laser protection class	3R
	Safety distance	6,5m
1	Safety bar for iCSE_LD / iCSE_LD M	CCD 10°

2	Welding Technology	Included
1	Qineo Champ CAN, SD	600A
1	Installation kit: VBC Ethernet	Qineo
1	Installation kit: SD Module	Qineo
1	Expert-Mode	
1	Operating module Premium	5m RPU
1	Swivel arm for operating module	
1	Cable Qirox -Qineo CAN Bus	8m
2	earth cable (lump sum)	
20	Cable assembly CAW600-D between wire drive unit and power source	per meter
1	Wire drive unit QN-WD-A3 RE/SZ/W/SD/DFW/WEC/CDD for	Qineo SD/CDD
1	Torch cable CAW-3,5H-SZ-C2 Qineo QWD-A-SZ/ QWD-AR-SZ	QRC CDD
Single wire Torch		
1	CDD (CLOOS DUO DRIVE) robot wire drive at torch side cpl. with collision sensor and torch bracket (10°)	Quinto II Ø 1,2mm

- 1 **MRW 510-35°-78-273 evo**
robot welding torch

Torch cleaning unit single wire

- 1 **DV-10-2**
pressure intensifier
- 1 **CMR-8-C**
torch cleaning unit
upright
- 1 **Wire cutter**
for CMR-8-C
- 1 **Cleaning unit gas nozzle
outside**
for CMR-8-C
- 1 **Connecting cable CMR - QIROX
Controller**
- 1 **cleaning cutter for MRW
380/510 evo**
- 1 **corner bracket for robot base** QRC/H-xxx

Wire barrel accessories

- 15 **liner f. wire guiding** 1m
type 13/8
- 15 **protective hose f. wire guiding** 1m
type blue /18
- 1 **connection nipple f. wire
guiding**
for liner 13/8 and protective hose
blue /18

3 Robot Positioner Included

- | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | FL-20kN
Floor-mounted linear track
technical data:
load capacity of the carriage: 20kN
travel speed: 1,2m/sec
travel length: 2000-21000mm |
| 6 | travel length per meter: FL-20kN |
| 1 | VS
Vertical stroke for upright robot
technical data:
load capacity of the carriage: 5kN
travel length: 1500/2000mm
travel speed: 0,20m/sec |

Travel length:

X-axis	6000mm
Y-axis	
Z-axis	2000mm

4 Positioner

Station 1:

- | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | TS-15kN
Workpiece positioner with turning and swiveling movement
technical data:
faceplate load: 15kN
max. nominal torque in Nm: 3750Nm
max. tilting moment in Nm: 20500Nm
mass moment of inertia: 2000kgm ²
free turning radius: 1250-1750mm
face plate diameter: 600mm
face plate height: 900mm |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

max. turning speed: 60°/sec
max. swiveling speed: 22,5°/sec
turning range: +/-360°
swiveling range: 370°

- 1 **Counter Bearing 20kN**
Moveable tailstock 5,4,3M
(manual)
- 1 **Shot-Pin - indexable 0**
position at counter bearing
(tailstock)

5 Fixtures (if applicable)

**Provided by Customer*

6 Safety Technology

- 30 **Safety Fence** 1 meter
corrugated grid with protective module
curtain or sheet metal
- 1 **Service Door**
- 1 **interface control**
for workpiece positioner or safety
equipment
- 2 **each other voltage supply** 1x SQ
- 1 **voltage supply external** 3kw
cooling unit for power sources
- 1 **workplace protection QIROX** QRC/QRH
axis 1-3
- 1 **light barrier** >8m
3 beams with post
- 1 **start preselection with post**
- 1 **Triple signal lamp with**
accessories
displaying safety stop,
disturbance and program running
- 1 **Signal lamp extension**
horn

- 1 **electrical part for
maintenance/service door**
with external reset key

System Price (without services) -

6 Services

- | | | |
|---|-------------------------------------------------------------------------------------------------|-------------|
| | At Customer Facility | |
| 2 | Installation Supervision at
Customer facility: (2) CLOOS
Technician for (4) days | At Customer |
| 1 | BASIC Programming Training -
3 people, 5 days at Customer
Facility. | At Customer |

Total Quotation Price (including services) -

As described above, without options (which are noted separately below if applicable)

The following welding machine packages will be included Free of Charge:

- | | | |
|----------|-----------------------------------------------------------|------------------|
| 2 | Qineo Next Premium Manual
Welding Machine 450A | S/N 138 &
327 |
| | Packages Consisting of: | |
| 2 | QX NX Water Cooler EC 1200 | |
| 2 | Water Cooler Connection Cable 0.5m | |
| 2 | MasterPlus Operating Module in Wire Drive | |
| 2 | Carriage with Gas Bottle Holder | |
| 2 | Wire Feeder QN-WD-M4 | S/N 195 & 602 |
| 2 | 5m Power Cable | |
| 2 | 10m CMW Connection Cable (welding
machine to feeder) | |
| 2 | 5m Ground Cable | |
| 2 | MHW 520evo 45° SZ 5.0m Trigger on
Bottom | |

This offer is strictly confidential and designated for your internal use only. In order to preserve the confidentiality of our business information, this offer must not be shared with third parties without our express written consent. We ask for your understanding.

Page 14 of 40

Commercial and Technical Terms of Delivery

The enclosed general terms and conditions of sale for products and services of CLOOS are applicable to all sales hereunder. In addition, the following terms and conditions shall apply to the sales of products hereunder.

Terms of Delivery

10-12 weeks, including shipping, upon receipt of written purchase order after clarification of all commercial and technical details.

Warranty

(12) months from date of delivery. Cost for consequent damages and loss of production are not part of the warranty.

Wear parts are excluded from the warranty. Regarding purchased parts stipulated by the customer, the warranty time of the supplier must be applied.

Terms of Payment

- 10% down payment upon receipt of written purchase Order
- 60% upon delivery at customer location
- 30% upon installation & recommissioning at customer location (no runoff criteria)

Remark:

Invoices not paid within terms will incur monthly interest charges. Invoices over 90 days past terms are subject to legal and collection fees, for which the customer is responsible.

Prices

Prices are in US Dollars **(USD)** and are **EXW Schaumburg, IL**.

Quotation is valid for 30 days.

Customer to be responsible for the transportation cost of the system

**All freight transport should offer air-ride suspension*

Services to be Rendered by Customer

- A project manager should be appointed to work with the CLOOS project team.
- All final part drawings, weld drawings and 3D models need to be provided to the CLOOS project team no later than 1 week after order placement.
- The CLOOS provided system layout drawing needs to be signed and returned with your approval notes within 1 week of receiving such drawing. Changes after approval are subject to additional costs.
- Fixture design layout needs to be signed and returned with your approval notes within 1 week of receiving such drawing. Changes after approval are subject to additional costs.
- Necessary construction work must be carried out prior to delivery. This includes foundations, steel foundation plates and welding works as indicated by CLOOS. Fixing points, auxiliaries for fixing (e.g. heavy-duty dowel, etc.), etc. must be provided by the customer.
- All freight transport should offer air-ride suspension
- Customer is responsible for unloading and internal transportation of components for installation.
- Dried, controlled and un-oiled compressed air (at least 5 bars, no more than 8 bars) must be provided at the consuming points.
- Wiring of all necessary supply lines to the corresponding entries allowing connection of the CLOOS units, as well as, laying and connecting work for data and signal communication to existing or other systems and installations.
- All necessary cable channels with covers to the individual system parts.
- All indications, documents, samples, etc. necessary for the carrying out of the works must be provided in time, free of charge and according to the time schedule indicated by CLOOS.
- Lifting gears during installation (crane or forklift with driver).
- Lockable room for storage of the high-grade components after delivery.
- Operator gangplanks, railings, safety fencing and barriers if not included in the quotation.
- Supply of mains voltage, light and heating during installation.
- Additionally required acceptance and performance evidences by third parties.
- Opening for delivery to installation site.
- It is understood that Customer personnel will participate in CLOOS programming classes prior to working with the system.

The above should be completed prior to delivery of the system; failure to do so may postpone installation.

QIROX® QRC-350**6 AXIS ROBOT**

The robot mechanics QRC320/350/410-E is a six-axis articulated arm robot with an excenter axis 7 which is integrated between robot base and centre point axis 1. The movements of all seven robot axes are synchronised by 100 %. The robot is usually positioned upright or overhead. The QRC320/350/410-E is mounted on a base or directly at a robot positioner. The QRC robot has a standard wrist where welding torches, flame cutters and other working tools with a weight of up to 15/10 kg can be mounted. The integration of a changing tool on the wrist allows to use more processes with a robot. Applications:

- MIG/MAG Welding
- Plasma and oxygen cutting
- Plasma and Plasma powder welding
- Easy handling tasks



Operating range	Ø 4470 mm
Repeatability	$\Delta \leq s \pm 0,1 \text{ mm}$
Operating range Axis 5	Ø3470 mm
Operating range height	+90°
Operating range	2580
Pay load	15kg
Swivel Speed Axis 1	184
Swivel Speed Axis 2	184
Swivel Speed Axis 3	177
Swivel Speed Axis 4	497
Swivel Speed Axis 5	542
Swivel Speed Axis 6	528
Swivel Speed Axis 7	90

ADVANTAGES:

- ✓ Less wear and improved, more user-friendly operation via optimized cables, plugs and motor protection
- ✓ Higher dynamics and weight reduction due to a leaner product design with rounded ergonomic forms
- ✓ Highest flexibility from modular design of the robot mechanics
- ✓ Best processing quality due to a high repeatability
- ✓ High offset speeds reduce cycle time
- ✓ Digital AC drives
- ✓ For floor or overhead mounting
- ✓ Absolute path measuring system

QIROX® QC2 Master**QIROX Controller: Optimum
"man-machine" interface**

The new control cabinet generation QIROX Controller QC2 is particularly designed to meet the requirements of welding technology and offers an optimum man-machine interface. The new servo technology ensures a dynamic movement and a high path accuracy of the robot during welding. The processes are controlled by an industrial PC with the capacity to simultaneously control all internal and external axes. The components are clearly arranged in a robust system cabinet where they are protected from dirt and can be easily exchanged. In total, this leads to high reliability and low maintenance expenditure. The new QIROX Controller QC2 is available in different sizes up to 8 (micro), 11 (master) and 20 axes (advanced).

**ADVANTAGES:**

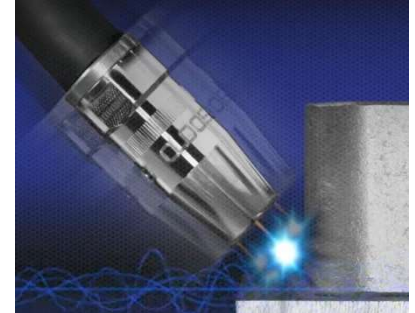
- ✓ Operating system developed for WELDING
- ✓ Multiple modes of interface: dedicated teach pendant keys, touch screen, & lockable full size flip down keyboard
- ✓ Multiprocessor system
- ✓ Separate digital controller
- ✓ A variety of optional combination possibilities with the RoboPlan and CarolaEdi offline programming software, Remote Service Manager (RSM), Process Data Manager (PDM) and User management (UMS) of CLOOS
- ✓ Clear arrangement of all components in a robust dirt-protected cabinet

Type of protection	IP54
Internal axes	6 - 7
External axes	4-5
Field bus	
LAN	2x
RS232C	2x
Digital & analogue I/O	
Connection capacity	up to 12 kVA
Humidity	EN60204-1/4.4.4
L/W/H	800 mm x 1300 mm x 600 mm (without attached parts)
Weight	250 kg
Mains Voltage	3 x 400-480 V, 50/60 Hz

QIROX® Arc Sensor

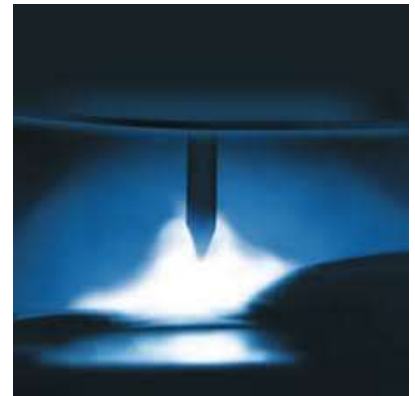
Path Correction: signals from the arc

The CLOOS arc sensor uses the arc to simultaneously weld and measure the joint position on the workpiece. The welding torch oscillates along the joint scanning the edges of the weld seam preparation. If the measured values, which are obtained electronically from weld current and voltage, are not the same on both sides, the weld seam position deviates from the programmed path. The computer-based robot controller adjusts the welding head position so that the seam is placed exactly in the center of the joint. In addition, this procedure corrects the distance of the welding torch to the workpiece.



Welding and Measuring

As the arc sensor enables measurement and welding to be carried out simultaneously, the loss in time is minimal. At the same time workpiece distortions – for example due to heat expansion – are directly compensated for. In this way the CLOOS arc sensor combines productivity with optimum quality. No additional intrusive parts are necessary.



Saving the measured values

After the robot has welded the root seam, the correction data determined is saved and used for welding the cover runs ensuring that the build-up of these runs is continuously optimized. The final result is further improved when combined with the CLOOS gas nozzle sensor, which determines the start of the weld seam.

ADVANTAGES:

Tasks	Path guidance during welding to follow part tolerances Height correction during TIG and plasma cutting
Detectable Geometries	Fillet weld V weld Y weld
Materials	Structural steel Chrome nickel steel
Mains Connection	24V DC / 1A
Weld Current Range	50-500A
MIN Profile Height	5mm
MAX Working Speed	200cm/min

- ✓ Nearly no loss in time
- ✓ No interference from external sensors
- ✓ Direct connection to the robot controller
- ✓ Control of the correction sensitivity
- ✓ Memory function – data storage for welding of cover passes

QIROX® Tactile Touch Sensor

START & END point exactly located

The start point and the workpiece joint contour play a special role in automated robot welding. Although the positions are defined by the relevant program which controls the robot, in practice deviations occur due to inaccurate parts or material tolerances. To ensure these deviations are quickly and accurately compensated for, the CLOOS tactile gas nozzle sensor checks the start and/or end positions – and corrects the programmed welding path correspondingly. The tactile gas nozzle sensor can be combined with the through-arc sensor.



Measuring the seam volume

If both positions are defined, the linear run of the weld seam is determined automatically. In the case of a V seam the tactile CLOOS gas nozzle sensor also measures the seam volume according to the same principle. After saving the information in the user program, the robot fills the seam along the optimized path. The main advantage is a perfect welding result as a basis for a reliable quality.

Electro-mechanical detecting principle

The CLOOS tactile sensor uses the torch gas nozzle or a separate tracer pin to determine start and/or end position. The robot moves the torch along the programmed seam tracking section. If the gas nozzle or a tracer pin touches the workpiece, a current flows, the robot stops and the position is stored. In order to define the X, Y and Z coordinates exactly, the workpiece is approached from three directions.

ADVANTAGES:

Tasks	Detection of ARC start and/ or end position Define workpiece position Define the linear welding path Measurement of volume in the case of V grooves
Detection Options	Gas nozzle Weld Wire Optional tracer pin
Materials	All materials with electro-conductive surface
Mains Connection	400V AC / 0.2A
Measuring Voltage	60V & 700V
Search Speed	Approx. 30cm/min

- ✓ Eliminate “non-value-added-time” when using the nozzle search option. No robot movement to external wire clipper required
- ✓ No interference from attached parts (except when using a tracer pin)
- ✓ Direct integration into the user program

QIROX® iCSE Laser Search Sensor

The offline laser sensors are non-contact optical measuring systems to position the robot and to determine the weld geometry. The laser sensor tracks the weld seam (offline) before starting the welding process. An optimum combination is to use the laser offline sensor for weld start determination and the arc sensor for seam tracking.

The start point and the workpiece joint contour play a special role in automated robot welding. Although the positions are defined by the relevant program which controls the robot, in practice deviations occur due to inaccurate parts or material tolerances. To ensure these deviations are quickly and accurately compensated for, the CLOOS laser sensor checks the start and/or end positions – and corrects the programmed welding path correspondingly. The laser sensor can be combined with the through-arc sensor.



ADVANTAGES:

Tasks	Detection of ARC start and/ or end position Define workpiece position Determine position of tubes Measurement of volume in the case of V grooves
Detection Geometries	Lap, V groove, circular arc, fillet, tube
Materials	
Dimensions	Φ100 x 43 mm
Min. measuring distance	310 mm
Search Speed	Approx. 300cm/min

- ✓ Faster search speeds compared to electrode or nozzle search
- ✓ Eliminate "non-value-added-time" when searching with the weld wire. No robot movement to external wire clipper required
- ✓ Low profile mounting position to minimize interference.
- ✓ Memory function – data storage for cover passes
- ✓ Insensitive due to non-contact measuring procedure

QINEO® PULSE

Variety and precision: these are the crucial conditions for successful pulsed arc welding. Whatever the capacity class. 350, 450 or 600 Amp: each QINEO® PULSE offers five different welding processes for a large variety of applications. Every QINEO® PULSE is equipped with a synergy mode and two fine adjustments. The synergic characteristic curves can therefore be perfectly adapted to external factors. In addition, every QINEO® PULSE can be equipped with different operating modules – from ECO for manual welding up to the PREMIUM version for automated processes. For all pulsed arc welding requirements: QINEO® PULSE.



Welding current	40 A - 600 A
Welding current at 60 % duty cycle	600 A / 44 V
Welding current at 100 % duty cycle	465 A / 37.5 V
Open circuit voltage	87 V
Mains voltage	480 V / 50 Hz / 3 phases
Special voltages	380 V, 415 V, 440 V, 500 V
Connection cable	4 x 10 mm ²
Mains protection	50 A
Type of protection	IP 23
Insulation class	F
Type of cooling	F
Dimensions L/W/H (without wire drive)	1226 x 630 x 741 mm
Weight (without wire drive)	234 kg
Maximum track width	approx. 552 mm

ADVANTAGES:

- ✓ **Utmost flexibility** Free adjustment of the characteristic curves and control parameters in a single parameter mode
- ✓ **Excellent process quality** High-tech for excellent welding results
- ✓ **Simple and intuitive** Clear control panel with extensive functions
- ✓ **Low operating costs** Energy saving standby mode
- ✓ **Stable function** Influences from outside circuits are compensated for
- ✓ **Compatible** Secure communication with welding robots via standardized field bus system

QINEO® External Operating Module | PREMIUM

With the PREMIUM operating module is designed for the highest level of automated welding tasks. The operation is easy and intuitive due to a colored LCD display with clearly arranged function buttons.

Individual characteristic curves Special materials require individual synergy programs. These can be generated and stored as characteristic curves on any QINEO® CHAMP. Programming is carried out directly on the operating panel without any auxiliary tools. The operating panel can be remotely mounted away from the power supply near operator controls. 5m & 10m lengths.



Optional Weld Data Monitoring

On the QINEO® CHAMP all welding parameters are monitored and archived to ensure constant weld seam quality. The weld data monitoring can be fully programmed via the Premium display and has a learning mode and several individually adjustable monitoring channels. The limit values and the reactions when exceeding or falling below thresholds can be programmed individually. It is possible to choose between two reactions: warning or interruption of the process. All results can be saved in a log book.

ADVANTAGES:

- ✓ Remote mounting location of weld machine control
- ✓ synergy programs for all process variants
- ✓ Penetration geometry
- ✓ Drop separation characteristics
- ✓ Arc dynamics
- ✓ Arc shape
- ✓ Start and end crater behavior

QINEO® Welding torch type MRW 510 evo

The robot welding torch must meet all the necessary requirements. Stability of the components, slim shape and optimum cooling characteristics are the most important criteria. The robot welding torches of the MRW series include additional advantages. Decisive features for a constant welding current are that the current transmission to the wire always takes place in the same position in the current tip. In order to fulfill this demand, the welding torches are equipped with a forced ignition. Constant weld seam quality and the reliable function of the arc sensor (option) are guaranteed. A setting jig is included in the scope of supply to control the welding torch geometry. A coupling unit which is integrated into the welding torch bracket makes it possible to dismantle the welding torch without influencing the cable assembly and vice versa. The support for the welding torch guarantees optimum repeatability, if the welding torch – for example after being checked in the setting jig – is mounted to the welding torch bracket again



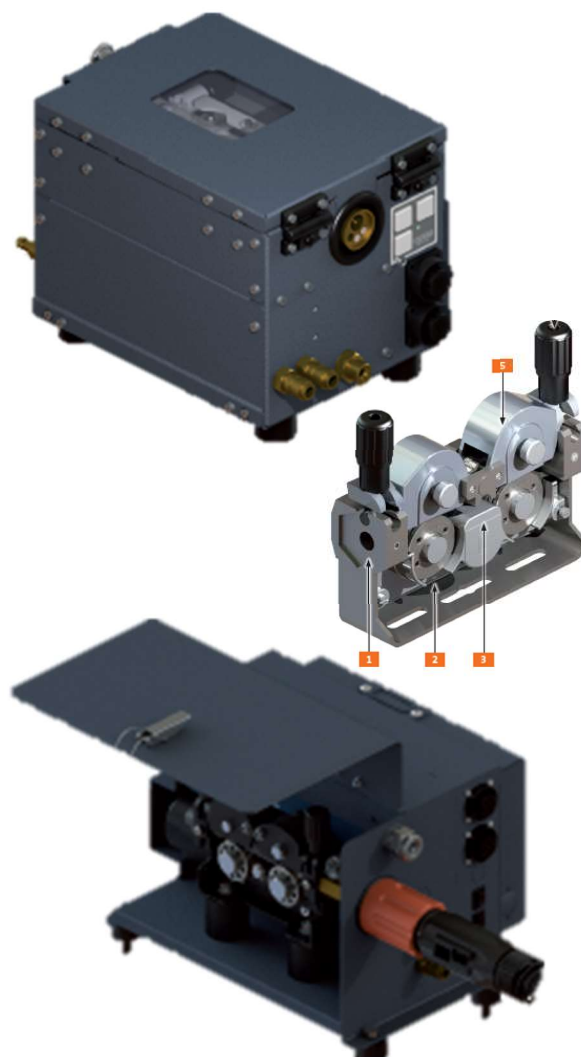
ADVANTAGES:

Power	450 Ampere 100% duty cycle – mixed gas 500 Ampere 100% duty cycle – with CO ₂
Wire diameter	0.8mm to 1.6mm
Type of Cooling	Water Cooled

- ✓ Slim shape for optimum accessibility
- ✓ Forced ignition
- ✓ High stability
- ✓ Double-walled, directly cooled gas nozzle
- ✓ High cooling agent throughput
- ✓ Easy quick swap of consumables

QINEO® QWD Wire drive unit

The wire drive unit has a protective housing in which the drive motor, the power transmission mechanics and the control electronics, in a specially protected area, are located. A CAN bus manages the communication between welding machine and wire drive unit. Outstanding features of the wire drive unit are low weight as well as minimum space requirement. A precise 4-quadrant-regulation and high motor power enable optimum traction and accuracy of the 2+2 roller drive. Large roller diameters provide the wire drive unit with a high feeding torque and guarantee thereby optimum ignition properties as well as excellent weld seam quality. Sensors for an effective control of the parameters shielding gas flow and wire feed quantity are available as options in the wire drive unit. These sensors determine the set values of the above-mentioned parameters and transfer them to the welding machine via CAN bus



ADVANTAGES:

- ✓ Powerful wire feeding
- ✓ Adjustable counter pressure force on wire drive rollers
- ✓ Ball-bearing wire drive rollers
- ✓ Low weight and minimum space requirement
- ✓ Upsetting, drawing or abrasion of wire is avoided. Weld quality is ensured
- ✓ Automatic cleaning of contact tip by wire retract avoids ignition errors

Wire Diameter	.08 – 2.0 mm 0.035" – 0.0787"
Wire feed speed	MAX 24 m/min
Weight	12.8 kg

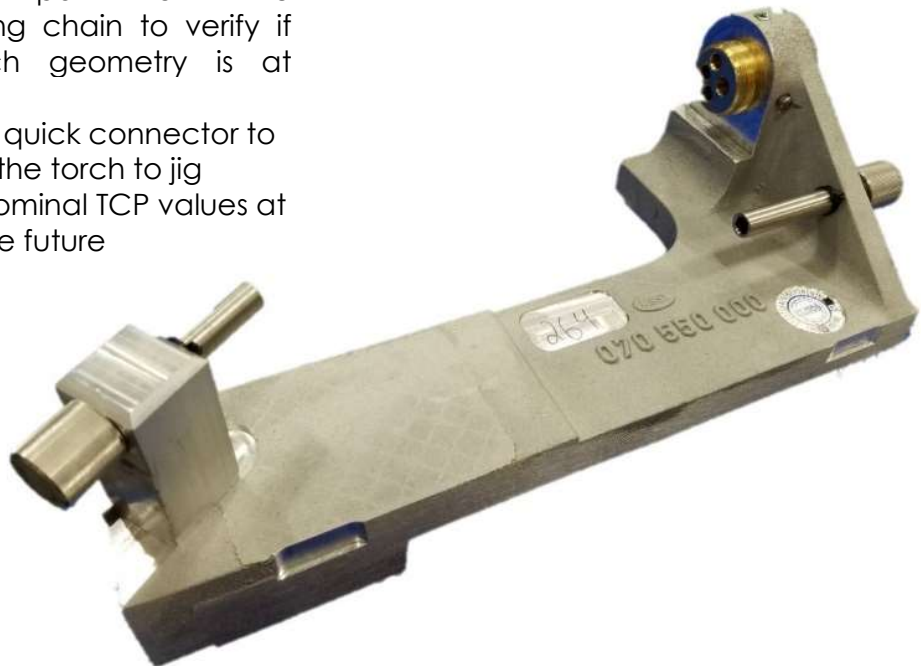
QINEO® Torch Setting Jig

As a jig of the robot, the welding torch has a fixed geometry. With the welding torch, the points at the work piece are approached and programmed. A setting jig is required in order to verify and, if necessary, recover the welding torch geometry. The welding torch can be quickly removed from the robot by means of a central connection, adjusted in the setting jig and then again be mounted to the robot. The setting jig is a simple, indispensable auxiliary device to ensure machine uptime.



ADVANTAGES:

- ✓ Recover after a crash and return quickly to auto-mode production
- ✓ Utilize as part of the troubleshooting chain to verify if welding torch geometry is at nominal
- ✓ Use the same quick connector to easily attach the torch to jig
- ✓ Reproduce nominal TCP values at any time in the future



QINEO® Torch Cable

QINEO Components: Designed for seamless interface

The torch cable assembly establishes the connection between wire drive unit and welding torch. It has quick action couplings on both sides to enable quick and easy exchange. Especially selected materials as well as the installation of kink protection elements on both sides provide a very long service life of the torch cable assembly. A coupling unit that is integrated into the torch bracket connects the torch cable assembly to the welding torch. This coupling unit enables the dismantling of the welding torch without influence on the torch cable assembly or vice versa.



ADVANTAGES:

Lengths	2.5m / 3.0m / 3.5m
Connections	<ul style="list-style-type: none"> ▪ welding current cable ▪ shielding gas ▪ Send & return water
Control cables	<ul style="list-style-type: none"> ▪ wire forward (jog) ▪ collision sensor connection ▪ control cable for gas nozzle ▪ sensor HSK (option) ▪ DUO-DRIVE connection (option)

- ✓ Quick action couplings on both sides
- ✓ Easy and economical repair
- ✓ Long service life
- ✓ High-quality materials
- ✓ Not influenced by offset speed and motion of the robot

QINEO® Automatic Torch Cleaning unit CMR7C

The mechanical torch-cleaning unit is an indispensable part of each GMAW welding robot system. This feature provides a method to clean the interior of the welding torch automatically and prevents the adherence of weld spatters. The robot moves the welding torch into the cleaning position. Two rotating blades remove adhered impurities from the interior of the torch. After the cleaning process the gas nozzle is sprayed with an anti-adhesive spray to prevent the adhesion of weld spatter and makes cleaning easier. The number of cleaning sequences depends on various conditions as e. g. type of process, gas, material and its surface, etc. The programmer determines the frequency of cleaning sequences in the working program of the robot controller.



Single wire

TANDEM



ADVANTAGES:

- ✓ Reduction of downtime and increase in productivity
- ✓ Increases service life of the welding torch consumables
- ✓ No adhesion of weld spatter at the gas nozzle
- ✓ Gas nozzle is sprayed with anti-adhesion spray
- ✓ Manual cleaning is no longer required

OPTION 2



QIROX® Roboplan BYS Maximum efficiency with offline programming

Path functions

Rotate and mirror paths, divide and join paths
Change the processing direction on a path
Change the processing sequence
Automatic programming of a path along or around a
Contour Tool distance override (angle of attack, inclination and rotation)
independent generation of feed motions between two positions

Function CAD paths

Optimized programming due to automatic path generation along the workpiece edges

Tool Change

Programming of a workpiece with different geometries (e.g. single wire and tandem welding torch)

Video and Screenshot function

Capturing of simulations as video and detail screenshots

Simulation functions

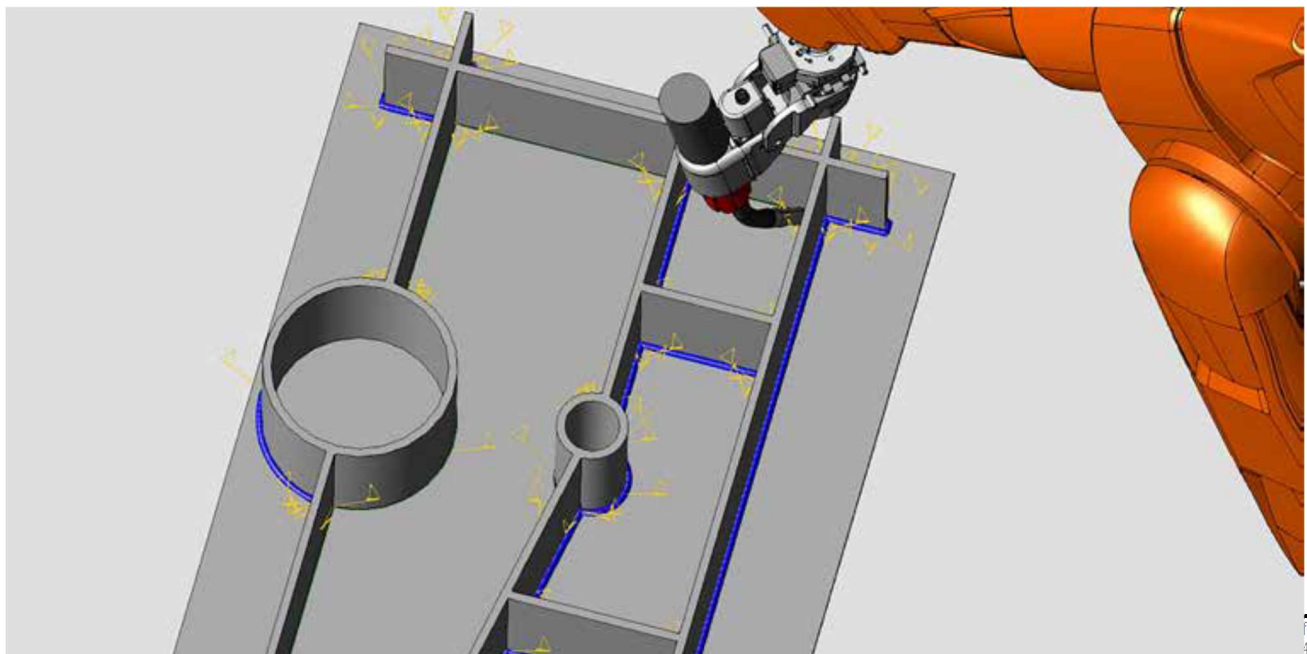
Movement simulation robot and external (synchronized) axes
Display of working envelope violations
Calculation of cycle time and weld length
Collision testing
Integration of PLC functions (clamping tool movement, tool axes, etc.)

Collision test

Comprehensive collision inspection
Costs due to possible collisions on the system are avoided
with offline tested programs
Integration of external motion sequences
Considerably reduced rework of programs in the robot controller

TEACH functions

Axis-specific (PTP) and Cartesian (CP) process
Synchronous movement of external axes Program, approach and delete points
Browse forward and backward to points
Insert and delete one or several points
Absolute or relative shifting and rotating
Accessibility test with calculation of axis value



QINEO® CLOOS Duo Drive | CDD2 SINGLE

The CLOOS Duo Drive is a supplemental external wire drive that is compactly integrated into the robot bracket and is synchronized with main wire feeder. The CDD unit ensures reliable and consistent feeding rates for applications with softer electrodes like aluminum as well as robotic solutions where placement of the wire barrel near the robot is not possible.



ADVANTAGES:

- ✓ Precise and consistent wire feed rates for demanding applications
- ✓ Compact design doesn't interfere with torch access
- ✓ Compatible with all CLOOS sensor products. iCSE Laser, Tracer Pin.

Applications	Steel, Stainless Steel, Aluminum
Angle	10°
Wire diameter	1.0mm to 1.6mm

QIROX® MANAX controls for workpiece positioners



This feature offers the operator manual control of the robot's servo positioner. With this feature, the operator can complete secondary operations while the part is still loaded in the robot system. When used in conjunction with a 2-station robot system, these pre and post robot manual operations can happen simultaneously while the robot is in AUTO mode.



ADVANTAGES:



- ✓ Complete secondary operations inside the robot system
- ✓ Eliminate double handling of production parts
- ✓ Eliminate the cost of a second manual spin out positioner AND reclaim this valuable factory floor real estate
- ✓ Eliminate ergonomic and safety issues related to manual or crane flipping of weldments for post robot operations.

1. GENERAL

- 1.1 These terms and conditions of sale (the "Terms") are the only terms which govern the sale of goods and services (hereinafter collectively referred to as "Supplies") by Cloos Robotic Welding (the "Company") to the buyer of any Company Supplies (the "Customer"). Notwithstanding anything herein to the contrary, if a written contract signed by both parties is in existence covering the sale of the Supplies covered hereby, the terms and conditions of said contract shall prevail to the extent they are inconsistent with these Terms.
- 1.2 The accompanying quote and these Terms (collectively, this "Agreement") comprise the entire agreement between the parties, and supersede all prior or contemporaneous understandings, agreements, negotiations, representations and warranties, and communications, both written and oral.
- 1.3 Issuance of a purchase order by Customer will constitute Customer's assent to these Terms. Acceptance of orders and issuance of a confirmation of sale by Company hereunder is based on the express condition that Customer agrees to all of the Terms. Acceptance of delivery by Customer will constitute Customer's confirmation of these Terms. This Agreement represents the complete agreement of the parties, and no terms or conditions in any way adding to, modifying or otherwise changing the provisions stated herein shall be binding upon the Company unless made in writing or in an electronic record and signed by an officer of the Company. No modification of any of these Terms will be effected by the Company's shipment of goods following receipt of Customer's purchase order, shipping request or similar forms containing terms and conditions conflicting or inconsistent with these Terms.

2. DELIVERY

- 2.1 Unless otherwise agreed in a writing or electronic record signed by an officer of the Company, all delivery dates are estimates and, in no case, shall the Company be liable for any expense, loss or damage whatsoever suffered by Customer as a result of the Company's failure to deliver the Supplies by the specified date. Times set for delivery of Supplies can only be observed if all documents to be supplied by Customer, necessary permits and releases are received in time and if agreed terms of payment and other obligations of Customer are fulfilled. Unless such conditions are fulfilled in time, times set shall be extended at the discretion of the Company.
- 2.2 A delivery schedule will be agreed with customer at the time of payment of deposit. Payment terms as detailed in Section 6.1 will be linked to such delivery schedule. The Supplies will not be dispatched if Customer is in default of previously agreed payment terms.
- 2.3 If the Supplies do not include assembly or installation, delivery of the Supplies to a carrier shall be deemed to constitute delivery to Customer, and thereupon risk of loss or damage to such Supplies shall be transferred to Customer.
- 2.4 If the Supplies include assembly or installation, the time at which the Supplies are fully assembled or installed or, if so agreed, after a fault-free trial run, shall be deemed to constitute delivery to Customer, and thereupon risk of loss or damage to such Supplies shall be transferred to Customer.
- 2.5 Title to the Supplies, including any Welding Systems, shall transfer to Customer upon payment in full of the purchase price thereof, including all payments as set forth in Section 6.1 or Section 6.2 below, as applicable.
- 2.6 Without limiting the generality of Section 2.1 above, the Company shall not be responsible for the following delays:
- (a) Modifications by Customer to the specifications or quantities required may result in delay in delivery and additional costs to be borne by Customer.
 - (b) Delivery is subject to the Company receiving correct and timely supply. The Company shall inform Customer if the item to be delivered is not available and shall, in case of cancellation, refund Customer's deposit, if any.
 - (c) If dispatch or shipment is delayed at Customer's request by more than one month after notice that the goods are ready for shipment (the "Notice") was given, the Company may charge Customer, for every month from the date of the Notice, storage costs of 0.5% of the price of the Supplies, but in no case more than a total of five percent (5%) of such Supplies.

- 2.7 If Customer refuses or fails to take delivery of the goods or fails to make payment against any installment or delivery or defaults in any of the terms of this Agreement, the Company shall have the option of either canceling the same or reselling the goods on Customer's account. Customer shall be liable for any losses and costs incurred thereby.
- 2.8 Without prejudice the provisions of Sections 2.3 and 2.4 above, the Company may deliver the Supplies in accordance with any revised instruction of Customer if compliance with such instruction is deemed by the Company to be reasonably practical. Customer shall, however, be liable for any extra costs incurred by the Company in complying with such revised instructions.
- 2.9 Unless otherwise expressly agreed in writing, any packaging supplied by the Company is intended only to be sufficient to protect the goods for normal conditions of transit to the Customer's premises and only for the normal period of transit to such premises. The Company shall have no responsibility for packing the goods in a manner suitable for protection during transportation from the Customer's premises to any other destination.

3. EXPORT

- 3.1 If the Supplies are to be exported, this order is subject to the Company's ability to obtain export licenses and other necessary papers within a reasonable period. Customer will furnish all Consular and Customs declarations and will accept and bear all responsibility for penalties resulting from errors or omissions thereon. Customer shall not re-export the Supplies or any goods or items which incorporate the Supplies if the re-export would violate United States export laws.

4. SECURITY INTEREST

- 4.1 Without derogating from the Company's rights as owner of the Supplies prior to transfer of title in accordance with the terms hereof, Customer hereby grants the Company a security interest in all Supplies and all Supplies heretofore and hereafter sold to Customer by the Company, and all proceeds thereof, until the purchase price and all other liabilities due the Company in respect of such Supplies have been paid in full. Customer shall execute and deliver to the Company any instruments or documents the Company deems appropriate to perfect said security interest including without limitation a Uniform Commercial Code Financing Statement. Customer authorizes, and ratifies and confirms, any filing heretofore or hereafter made by the Company of any financing statements which identify Customer as debtor, the Company as secured party, and any goods heretofore or hereafter supplied by the Company to Customer and the proceeds thereof as collateral. The Company may file a copy of this Agreement at any time as a financing statement for the purpose of perfecting such security interest. Customer agrees to give the Company prior notice of any change in Customer's name or corporate structure.
- 4.2 The Company shall have all rights and remedies of a secured party under the Uniform Commercial Code, which rights shall be cumulative and not exclusive. The Company reserves the right to require payment for any shipment hereunder in advance, or satisfactory security in addition to that granted herein, if the financial performance or credit worthiness of Customer is unsatisfactory to the Company.
- 4.3 If Customer fails to make payment in accordance with the terms of this Agreement or otherwise fails to comply with any provision hereof, the Company may, at its option (and in addition to other remedies), cancel any unshipped portion of this order; in such event, Customer will remain liable for all unpaid accounts.

5. PRICES

- 5.1 All prices are net of transportation costs, customs and other import duties, each of which shall be borne by Customer, unless otherwise specified in writing or in an electronic record signed by an officer of the Company, and are subject to adjustment, without notice, to Company's price in effect at the time of shipment. Any increase in transportation rates or any changes in routing resulting in an increase in transportation costs, customs or other import duties shall each be paid and borne by Customer.

- 5.2 In addition to the specified purchase price and other provisions relating to the purchase price set forth herein the Customer will pay all taxes, excises, license fees, duties, imports and other charges (other than income taxes or taxes in the nature of income tax) levied, assessed or imposed upon the Company in the United States of America by reason of or applicable to the manufacture, sale, purchase and delivery of the Supplies furnished hereunder, or any parts thereof. Customer shall make such payment to the Company at or before the time at which the Company is required to pay it.
- 5.3 If the Company is also required to assemble or install any Supplies, Customer shall pay the agreed remuneration and any incidental costs required, including without limitation travel costs, costs for the transportation of tools and equipment, personal luggage and travel allowances.
- 5.4 Unless otherwise stated, quoted prices are valid for a period of ninety (90) days from Customer's receipt of Company's quotation. Notwithstanding anything contained herein, Company may terminate a quote at any time upon written notice to Customer.

6 TERMS OF PAYMENT

- 6.1 Payment schedule for Customized Welding Systems will be as follows:
30% down payment with the purchase order
30% upon system layout approval
30% upon shipment from the Company
10% balance after system re-commissioning at customer site (Not to exceed 45 days after delivery)
- 6.2 Payment schedule for Pre-Engineered Welding Systems will be as follows:
50% down payment with the purchase order
50% upon shipment from the Company
- 6.3 Payment schedule for individual welding machines, spare parts and consumables shall be due within 30 days of shipment from the Company.
- 6.4 In the case of Supplies for which no preliminary total can be determined at the time of ordering, the Company reserves the right, depending on the circumstances and in its discretion, to charge a deposit of up to 50% of the estimated total at the time of ordering and partial payments during the time of performance according to the costs incurred.
- 6.5 Deposits and partial payments shall earn no interest.
- 6.6 Unless otherwise agreed all payments shall be made in US Dollars by check or by wire transfer of immediately available funds. All invoices must be paid as and when due without offset
- 6.7 If Customer fails to make payments as set forth in Section 6.1 and/or Section 6.2 above:
- 6.7.1 A default shall be deemed to occur without any further notice from the Company. Without prejudice to any other rights of the Company contained herein, a service charge, consisting of collection fees and legal fees, equal to an additional thirty-three percent (33%) of the total price shall be added to all past due amounts.
- 6.7.2 The Company shall be entitled to enforce its security interest under Section 4.1 above.
- 6.7.3 The Company can (i) defer further shipments under this order and/or any other order from Customer which has been accepted by the Company until such payment is received or (ii) cancel this order and/or any other orders from Customer which have been accepted by the Company and recover damages.
- 6.8 The Company shall be entitled to set off all claims due from Customer to (a) the Company and (b) any other Company affiliates or companies under common control with the Company, against any claims Customer may have against the Company and/or one or more of the aforementioned companies. The Company shall forward a list of such companies to Customer upon request.

7 ASSEMBLY AND INSTALLATION

- 7.1 Unless otherwise agreed in writing, assembly/installation shall be subject to the following provisions, Customer shall provide at its own expense:

- 7.1.1 all earth and construction work and other ancillary work outside the scope of the work agreed to be performed by the Company, including the necessary skilled and unskilled labor, construction materials and tools;
- 7.1.2 the equipment and materials necessary for assembly and commissioning such as scaffolds, lifting equipment and other devices as well as fuels and lubricants;
- 7.1.3 energy, water and other utilities at the point of use including connections, heating and lighting;
- 7.1.4 suitable dry and lockable rooms of sufficient size adjacent to the site for the storage of machine parts, apparatus, materials, tools, etc. and adequate working and recreation rooms for the assembly and installation personnel, including sanitary facilities as are appropriate in the specific circumstances;
- 7.1.5 all measures reasonably appropriate for the protection of Customer's own possessions and to protect the possessions of the Company and of the assembly and installation personnel at the site; and
- 7.1.6 protective clothing and protective devices needed due to particular conditions prevailing on the specific site.
- 7.2 Before the assembly/installation starts, Customer shall make available of its own accord architectural drawings and plans, as well as any other information or makings required concerning the location of concealed electric power, gas and water lines or of similar installations as well as the necessary structural data.
- 7.3 Prior to assembly or installation, the materials and equipment necessary for the work to start must be available on the site of assembly/installation and any preparatory work must have advanced to such a degree that assembly/installation can be started as agreed and carried out without interruption. Access roads and the assembly/installation site itself must be level and clear.
- 7.4 The Company shall make its own employees available to provide on-site installation assistance. Notwithstanding the foregoing, the Company shall not be responsible for the means, methods, techniques or procedures of installation selected by Customer or any failure of installation personnel to perform the assembly or installation in accordance with the applicable assembly instructions or Customer's instructions. Except to the extent that the Company's employees actually perform the assembly or installation, the Company is in no manner a guarantor or warrantor of performance or workmanship of the installation personnel with regard to the assembly or installation or any work thereon; provided that if the Company's employees actually perform the assembly or installation, such assembly or installation shall be performed in a good and workmanlike manner.
- 7.5 If assembly, installation or commissioning is delayed due to circumstances for which the Company is not responsible, Customer shall bear the reasonable costs incurred for idle times and any additional traveling of the Company's or installation personnel.
- 7.6 Customer shall attest to the hours worked by assembly and installation personnel at weekly intervals and Customer shall confirm in writing if assembly, installation or commissioning has been completed.

8 SPECIFICATIONS

- 8.1 The Company will endeavor to manufacture the Supplies in accordance with the specifications in effect at the time of its acceptance and confirmation of the order. The Company reserves the right notwithstanding the above to vary such specifications without notice in light of changes in technical knowledge, production techniques, government or other regulations, consideration for safety or other reasonable cause. Notwithstanding the foregoing, the delivery of goods conforming to the Company's prevailing design and specifications at the time of delivery, including those variations permitted by this Section 8, shall be good and sufficient performance of this contract by the Company. If any model or sample is shown to Customer, Customer acknowledges that such sample or model was used merely to illustrate the general type and quality of Supplies and not to represent that the Supplies would necessarily conform to the sample or model.
- 8.2 If the Supplies involve testing, the criteria for all testing shall be the Company's applicable specifications utilizing factory specified calibration and test procedures and instruments. Test procedures are available upon request.

- 8.3 Any specifications, drawings, plans, notes, instructions, engineering notices, or technical data of the Company furnished to Customer shall be deemed to be incorporated herein by reference the same as if fully set forth. The Company shall at all times retain title to all such documents, and Customer shall not disclose such to any party other than the Company or a party duly authorized by the Company.
- 8.4 Customer agrees that any specifications, drawings or plans developed by Customer and furnished to the Company to be incorporated into the Supplies shall belong to the Company and Customer shall have no right, title or interest in any such specifications, drawings or plans.

9 WARRANTY

- 9.1 The Company warrants that the Supplies to be sold hereunder will be free of any and all liens and encumbrances at the time they are delivered to Customer.
- 9.2 Customer shall promptly inspect all Supplies upon delivery. No claims for shortages will be allowed unless shortages are reported to the Company, in writing, within ten (10) days after delivery. Subject to the other provisions of this Section 9, the Company warrants that for twelve (12) months commencing on the date of delivery of the Supplies (unless the Supplies require assembly or installation by the Company, in which case, commencing on the date the initial assembly or installation is complete), the Supplies shall be free from material defects in material and workmanship under normal use and service and shall conform, in all material respects, to the specifications in the Company confirmation of sale. EXCEPT FOR THE WARRANTIES SET FOR IN SECTIONS 9.1 AND 9.2, NO OTHER WARRANTY, EXPRESS OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, COMMON LAW, COMMERCIAL USAGE OR OTHERWISE INCLUDING ANY WARRANTIES OF MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS, OR FITNESS FOR A PARTICULAR PURPOSE, SHALL EXIST IN CONNECTION WITH THE SALE, INSTALLATION OR USE OF ANY GOOD, SERVICES OR SUPPLIES SOLD HEREUNDER. This warranty extends only to the first purchaser of the Supplies. Any warranty claims by Customer with reference to the Supplies sold hereunder for any cause shall be deemed waived by Customer (a) if Customer makes any further use of the Supplies, and (b) if Customer fails to submit a detailed notice of such defect to the Company in writing within thirty (30) days from the date Customer discovered, or should have discovered, any claimed breach. Any warranty claims must be made in writing and delivered to the Company the twelve (12) month warranty period described above. Company shall not be liable for a breach of the warranty set forth herein if: (i) the defect arises because of Customer or a third-party failed to follow the Company's instructions as to the storage, installation, commissioning, use or maintenance of the Supplies; or (ii) Customer, or a third party, alters or repairs such Supplies without the prior written consent of Company.
- 9.3 Any claims not in accordance with the terms of this Section shall be barred. Upon receipt of a proper claim, the Company shall either inspect the Supplies in the Customer's possession or request that the Customer deliver the Supplies, at the Customer's expense, to the Company at its factory or such other site as designated by the Company for inspection by the Company.
- 9.4 Notwithstanding anything contained herein, warranties described in Sections 9.1 and 9.2 shall not apply to, and the Company shall not be responsible for, nor replace or repair, Supplies of a consumable nature, including, but not limited to, oil, grease, welding guns, cable assemblies, outer cable, cable connections, welding tips and gas nozzles.
- 9.5 The Company shall, at its option, repair or replace, free of charge, any Supplies which it reasonably determines to be in breach of its warranty, and the Company shall ship the repaired or replaced Supplies to the Customer F.O.B. point of shipment. If repair and replacement are impractical, in the Company's sole discretion, the Company may issue a credit or otherwise refund the purchase price of the Supplies. It is expressly agreed that repair, replacement or refund of purchase price of the Supplies shall be the exclusive and sole remedy for breach of warranty or any other claim with respect to the Supplies or their installation, including, without limitation, those based upon contract, warranty, tort or strict liability. THE COMPANY SHALL NOT BE LIABLE FOR REMOVAL OR INSTALLATION COST, DOWNTIME, DAMAGE TO OTHER PROPERTY, REDUCED PRODUCTION, CANCELLED ORDERS, BREACH OF CONTRACT BETWEEN CUSTOMER AND ANY THIRD PARTY, LOSS OF BUSINESS OR PROFITS, OR ANY SIMILAR OR DISSIMILAR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES FOR ANY REASON.
- 9.6 Any installation, operation, use, maintenance, or application of the Supplies other than according to the capacities, conditions and instruction published in the Company's instruction manual or otherwise approved in writing by the Company, or any defacement (including repairs made or attempted by others), modification or alteration to the Supplies, not approved in writing by the Company, or negligence of any person when using the Supplies shall void this warranty.

- 9.7 Products manufactured by a third party ("Third Party Product") may constitute, contain, be contained in, incorporated into, attached to or packaged together with, the Supplies. Third Party Products are not covered by the warranties described in Sections 9.1 and 9.2. For the avoidance of doubt, THE COMPANY MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY THIRD PARTY PRODUCT, INCLUDING ANY (a) WARRANTY OF MERCHANTABILITY; (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; (c) WARRANTY OF TITLE; OR (d) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE. To the extent permitted without resulting in any adverse effect to the Company, the Company hereby assigns and transfers to Customer any and all rights transferable by the terms and conditions of any Third Party Product warranty.

10 LIMITATION OF LIABILITY

- 10.1 IN NO EVENT SHALL THE COMPANY BE LIABLE TO CUSTOMER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSS OF PROFITS, WHETHER ARISING OUT OF BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), OR OTHERWISE (INCLUDING THE SALE, DELIVERY, NON-DELIVERY, SERVICING, ASSEMBLY, USE, LOSS OF USE OR FAILURE OF THE SUPPLIES OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT THE COMPANY'S PRIOR WRITTEN CONSENT), REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE, WHETHER THE COMPANY WAS NEGLIGENT AND WHETHER OR NOT THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE. IN NO EVENT SHALL THE COMPANY'S AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO THIS AGREEMENT, WHETHER ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, EXCEED 50% OF THE TOTAL OF THE AMOUNTS PAID TO THE COMPANY FOR THE SUPPLIES AND ANY OTHER GOODS SOLD OR SERVICE PROVIDED UNDER THE AGREEMENT.

11 CUSTOMER INDEMNITY

- 11.1 Customer shall indemnify, defend and hold harmless the Company, the Company's subsidiaries, affiliates, successors or assigns and their directors, officers, shareholders, employees, suppliers and customers (the "Indemnified Parties") from and against any and all losses, damages, liabilities, deficiencies, claims, actions, judgments, settlements, interest, awards, penalties, fines, costs, or expenses of whatever kind, including reasonable attorneys' fees ("Losses"), resulting from or arising out of any third-party claim (including any claim by a government entity or other authority) alleging: (a) Customer's breach or non-fulfillment of any covenant under this Agreement; (b) Customer's negligent or more culpable act or omission (including any reckless or willful misconduct); (c) any bodily injury, death of any person, or damage to personal property caused by the negligent or more culpable acts or omissions of Customer; (d) any failure by Customer to comply with any applicable federal, state, or local laws, regulations, or codes in the performance of its obligations under this Agreement.
- 11.2 Where any Supplies are manufactured pursuant to patterns, plans, drawings, or specifications furnished by Customer, Customer shall indemnify, defend and hold harmless the Indemnified Parties from and against any and all Losses resulting from or arising out of any suit or claim that the Supplies, including the use or sale thereof, infringe or misappropriate the patent, copyright, trade secret or other intellectual property right of any third party. The indemnity obligations included in this Section 11.2 shall apply regardless of the the Company's manufacture of such Supplies.

12 INSOLVENCY

- 12.1 If Customer shall become bankrupt or insolvent or make an assignment for the benefit of creditors, or in the event of a resolution being passed or proceedings commenced for the liquidation of Customer, or if a Receiver is appointed of all or any part of Customer's assets, the Company shall be entitled to cancel and terminate this Agreement in whole or in part by notice in writing without prejudice to any right or remedy accrued or accruing to Company.

13 FORCE MAJEURE; COVID-19

- 13.1 The Company shall not be under any liability, shall not be responsible to Customer, nor shall the Company be deemed to have defaulted or breached this Agreement, for any failure, delay, loss or damage caused or resulting wholly or in part by act of God, flood, fire, earthquake, explosion, war, invasion, terrorist threats, riot, epidemic, governmental restriction, condition or control, any change in laws, rules and regulations, non-arrival of imported goods, inability to obtain supplies, transport or loading facilities, trade dispute, labor dispute (whether such dispute involves its employees or not), or by reason of any other act, omission,

matter or thing beyond the Company's reasonable control, including failure by the Customer hereto to carry out the provisions of this contract.

- 13.2 Due to the ongoing situation regarding Covid-19, the parties acknowledge that there is a possibility that the supply chain may be affected in the future. The parties acknowledge that there are signs of a critical development in the raw materials markets and, as a result, foresee a shortage of machine components, steel, plastics and other components, especially - but not exclusively - electronic chips. Due to this situation, the parties agree to the following terms with respect to the delivery and performance dates specified in the Agreement:
- 13.2.1 Should the Company not be able to meet the agreed delivery dates because suppliers do not deliver to the Company as scheduled or a supplies are not available for delivery, the agreed delivery and service obligations shall be extended accordingly, without breach or default occurring hereunder. In no event shall the Company be liable for any penalties, damages or otherwise that may result, relate to or may otherwise be claimed by, the Customer as a result of, or related to, such delay or unavailability.
 - 13.2.2 The Company must inform the customer promptly after becoming aware of such a delay or unavailability, including its expected duration, if possible.
 - 13.2.3 Should the delay in delivery exceed a period of 6 months, the Customer may cancel such order by providing written notice thereof to the Company, without such cancellation resulting in breach hereunder, liability or penalty as a result of such cancellation. Any advance payments for such order received prior to the Company's receipt of its notice under this Section 13.2.3 will be refunded by the Company.
 - 13.2.4 In the event of any conflict or inconsistency between this Section 13.2 and any other terms in this Agreement or any other agreement between the parties, the terms of this Section 13.2 shall prevail.

14 GOVERNING LAW – ARBITRATION

- 14.1 This document and the sale of all Supplies shall be governed by and construed in accordance with the laws of the State of Illinois. Whenever there is a conflict of laws, the internal laws of the State of Illinois shall prevail (without regard to principles of conflicts of laws). The parties agree that any dispute arising hereunder or from the Supplies shall be arbitrated in Cook County, Illinois in accordance with the commercial arbitration rules of the American Arbitration Association. The parties hereby agree that the sole proper jurisdiction and venue for any disputes not subject to arbitration hereunder shall be either a state or federal court located in Cook County, Illinois. For such purpose, Customer, if not located in the State of Illinois, irrevocably appoints the Secretary of State of Illinois as its agent for receipt of service of process or notices.

15 EQUAL OPPORTUNITY CLAUSE

- 15.1 This clause applies only in the event that the Supplies are to be used in whole or in part for the performance of government contracts and where the dollar value of said Supplies exceeds, or may in any one year exceed, \$10,000:
- 15.1.1 In connection with the performance of work under this contract, the Company agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Company agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
 - 15.2 The provisions of the Equal Opportunity Clause, as promulgated by Executive Order 11246 dated September 24, 1965, as amended, are incorporated herein by reference.
 - 15.2.1 The following provisions regarding equal opportunity, and all applicable laws, rules, regulations, and executive orders specifically related thereto, including applicable provisions from the Federal Acquisition Regulations, and supplements thereto, are applicable hereto, to the extent that the minimum monetary amounts under such regulations have been satisfied: 41 CFR 60-1.4, Equal opportunity clause; 41 CFR 60-1.7, Reports and other required information; 41 CFR 60-1.8, Segregated facilities; 41 CFR 60-250.4,

Affirmative action clause (Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era); 41 CFR 60-741.4, Affirmative action clause (Affirmative Action for Handicapped Workers).

16 LEGAL FEES

- 16.1 In the event of any dispute arising herefrom, including without limitation any collection fees in connection any amounts due hereunder, the Company shall be entitled to recover from Customer all reasonable attorneys' fees, costs and expenses incurred by the Company in enforcing any of the Company's other rights hereunder.

17 CANCELLATION

- 17.1 Orders placed pursuant of this quotation can be canceled only with the Company's written consent which may be granted or withheld by the Company in its sole discretion. In the event of such consent, Customer shall pay to the Company promptly upon receipt of invoice from it:
- 17.1.1 The contract price for all Supplies that shall have been completed prior to receipt of notice of cancellation;
- 17.1.2 All actual costs made or incurred by the Company in connection with the uncompleted portion of the order plus normal profit of the total contract price as partial liquidated damages; and
- 17.1.3 Cancellation charges, if any, incurred by the Company on account of its purchasing commitments made under the order.
- 17.1.4 All work in process paid for by Customer hereunder shall be delivered to Customer on an "as is" basis, as of the date of such cancellation at the sole cost and expense of Customer. For the avoidance of doubt, THE COMPANY MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY SUCH WORK-IN-PROCESS, INCLUDING ANY (a) WARRANTY OF MERCHANTABILITY; (b) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; (c) WARRANTY OF TITLE; OR (d) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.

18 CUSTOMER'S USE

- 18.1 Customer hereby agrees that Customer shall use and require all persons operating the Supplies to use any and all proper, safe operating procedures set forth in operator's manuals, American National Safety Standards, OSHA Regulations, and instruction sheets relating to the goods, and any and all available feasible, and practical point of operation safety devices consistent with Customer's use of the goods, and Customer shall not remove or modify any device, warning sign, operator's manual or work handling tools installed thereon or attached thereto.
- 18.2 Customer shall notify the Company promptly, in writing, and in all events within ten (10) days after it's occurrence, of any accident or malfunction involving the Supplies which results in injury to or death of any person, including, but not limited to, Customer's agents and employees, or damage to property, including Customer's property, or the loss of use thereof; and Customer shall cooperate fully with the Company in investigating and determining the cause of any such accident or malfunction. In the case of an accident or malfunction, Customer agrees that is shall not operate or use such Supplies until the cause(s) of such accident or malfunction are identified and corrected. Customer agrees to indemnify, protect, defend and hold harmless the Indemnified Parties from and against any and all Losses resulting from or arising out of Customer's breach of this Section 18.

19 MISCELLANEOUS

- 19.1 Customer shall not assign or delegate any of its rights or obligations under this Agreement without the prior written consent of the Company.
- 19.2 All non-public, confidential or proprietary information of Company, including but not limited to, specifications, samples, patterns, designs, plans, drawings, documents, data, business operations, customer lists, pricing, discounts, or rebates, disclosed by Company to Customer, whether disclosed orally or disclosed or accessed in written, electronic or other form or media, and whether or not marked, designated, or otherwise identified as "confidential" in connection with this Agreement is confidential, solely for the use of

performing this Agreement and may not be disclosed or copied unless authorized in advance by Company in writing. Upon Company's request, Customer shall promptly return all documents and other materials received from Company. Company shall be entitled to injunctive relief for any violation of this Section. This Section does not apply to information that is: (a) in the public domain; (b) known to Customer at the time of disclosure; or (c) rightfully obtained by Customer on a non-confidential basis from a third party.

- 19.3 No waiver by Company of any of the provisions of this Agreement is effective unless explicitly set forth in writing and signed by Company. No failure to exercise, or delay in exercising, any right, remedy, power or privilege arising from this Agreement operates, or may be construed, as a waiver thereof. No single or partial exercise of any right, remedy, power or privilege hereunder precludes any other or further exercise thereof or the exercise of any other right, remedy, power, or privilege.
- 19.4 The headings of the Articles and Sections used herein are for the convenience of reference only and shall not affect the meaning of any provision. If any of these Terms are deemed unenforceable, all other provisions shall be unaffected.
- 19.5 In the event that any one or more of these terms or conditions is held invalid, illegal or unenforceable, such provision or provisions shall be severed and the remaining terms and conditions shall remain binding and effective.
- 19.6 The provisions of these Terms which by their nature should apply beyond their terms will remain in force after any termination or expiration of this Agreement including, but not limited to, Sections 4, 9, 10, 11, 14, 16, 18 and 19.
- 19.7 These Terms may only be amended or modified in writing stating specifically that it amends these Terms and is signed by an authorized representative of each party.
- 19.8 The relationship between the parties is that of independent contractors. Nothing contained in this Agreement shall be construed as creating any agency, partnership, joint venture or other form of joint enterprise, employment or fiduciary relationship between the parties, and neither party shall have authority to contract for or bind the other party in any manner whatsoever.