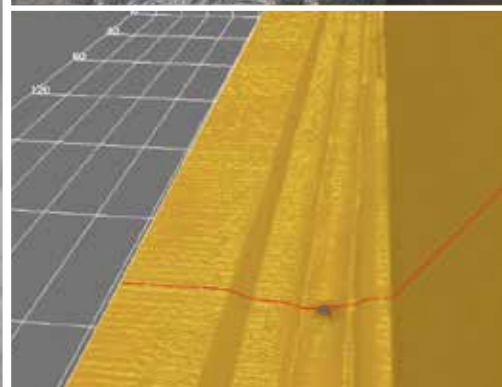


POWER-SCAN™

COMPACT WELD BEAD INSPECTION SYSTEM



Color 3D/2D scan of weld

SERVO-ROBOT

POWER-SCAN™

COMPACT WELD BEAD INSPECTION SYSTEM



SYSTEM DESCRIPTION

The POWER-SCAN™ system is composed of a 3D laser vision camera head (POWER-CAM™ and QUANTA-S™ families), an industrial control unit (POWER-BOX™) and a software package (WELDSURE™) to perform the inspection of the weld bead.

POWER-SCAN™ – INSPECTION SYSTEM

POWER-CAM™ laser-camera mounted on robot

BAD **GOOD**

POWER-BOX™ control unit

Monitoring software package

JOINT INSPECTION

Joint type	T-Joint	Butt Joint (Square, V and Bevel Groove)
Features		
Beta Angle (°)	30 to 140	140 to 200
Root Opening (mm)	0 to 6	0 to 10
Mismatch/Hi-Lo (mm)	N.A.	0 to 6
Groove Angle (°)	N.A.	30 to 90
Bevel Angle (l,r) (°)	N.A.	15 to 45

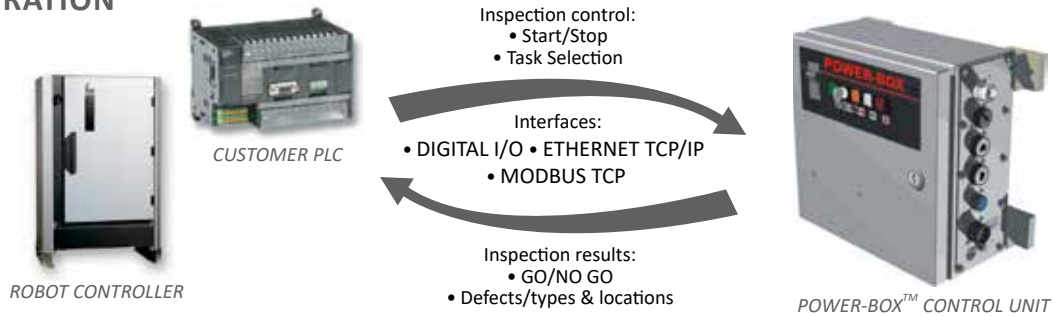
N.A. - Not Applicable

WELD INSPECTION

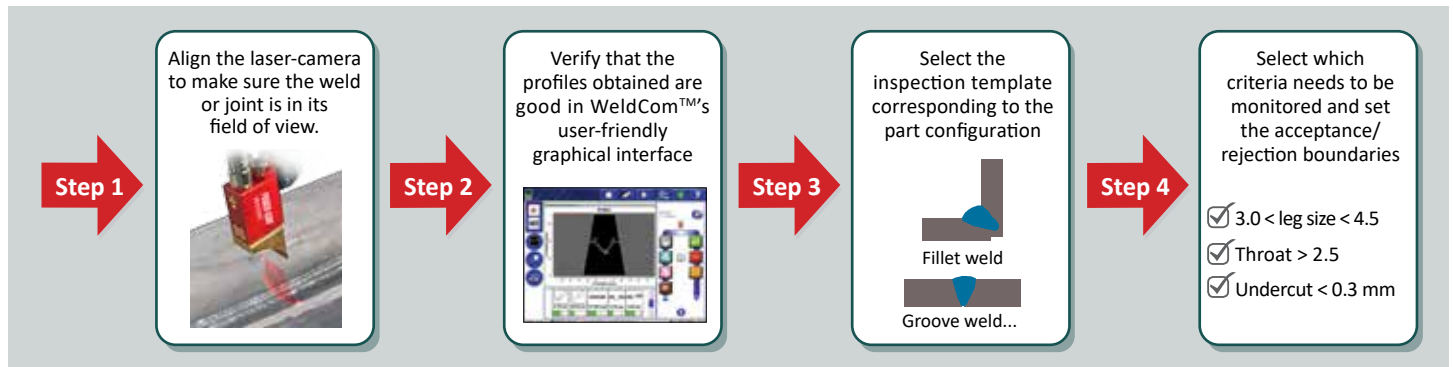
Weld type	Fillet weld	Groove weld
Features		
Leg and Size (l,r) (mm)	2 to 50	N.A.
Theoretical Throat (mm)	2 to 35	N.A.
Convexity (mm)	0 to 20	0 to 20
Reinforcement (mm)	N.A.	0 to 20
Undercut (l,r) (mm)	0 to 3	0 to 3
Toe Angle (l,r) (°)	90 to 160	90 to 180
Mismatch/Hi-Lo (mm)	N.A.	0 to 6
Beta Angle (°)	30 to 140	140 to 200
Face Width (mm)	N.A.	2 to 55
Porosity, Cracks and Spatter (mm)	0.5 to 5	0.5 to 5

N.A. - Not Applicable

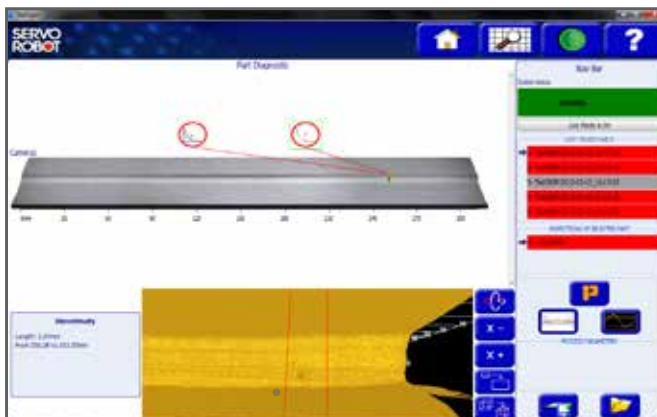
EASY INTEGRATION



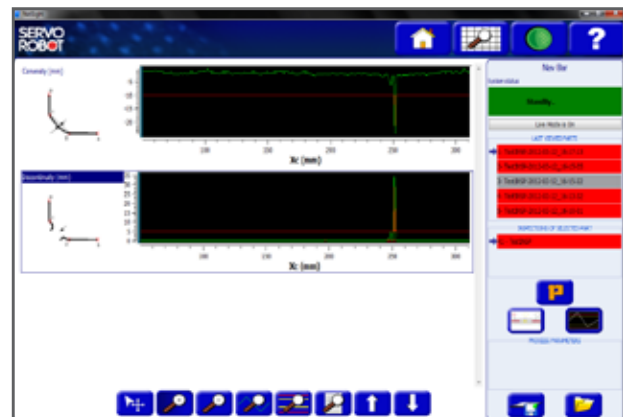
EASY CONFIGURATION



USER-FRIENDLY MONITORING INTERFACE



NetSight™'s 3D View screen showing a defect



NetSight™'s detailed screen showing measurements

FEATURES AND BENEFITS

- Fully integrated system with laser-camera, control unit and software.
- Very compact control unit with flexible communication interface.
- Immune to the Arc Welding processes (spatter, heat, etc.).
- Not affected by ambient lighting conditions.
- Can inspect welds of any materials.
- Very rugged laser-camera frame.
- Pressurized air flow nozzle designed to protect disposable lens against dust and fume.
- High-speed digital laser-camera allows for scanning speed up to 6 meters/minute (235 inches/minute).
- Informs the robot or PLC when a defect is detected.
- Displays the part inspection results on a user-friendly 3D graphical interface.
- Saves all the inspection data available in the on-board database.
- Checks joint fit-up.
- Measures weld shape/geometry.
- Detects weld defects.
- Allows for 100% control of the parts produced.
- Eliminates manual inspection.

TECHNICAL SPECIFICATIONS

	POWER-CAM	POWER-CAM/SHR	QUANTA-S	QUANTA-S/LF	
OPTICAL SPECIFICATIONS					
EMBEDDED LASER RANGE CAMERA	<i>Line</i>	<i>Line</i>	<i>Line</i>	<i>Line</i>	
Light source	*	*	*	*	
Z_1 - Stand-off to nozzle (mm)	56	52	104	99	
Z_2 - Depth of field (mm)	140	14	6.5	16	
A - Close plane (FOV) (mm)	27	11.5	7.9	17.3	
B - Far plane (FOV) (mm)	76	14	8.4	19.3	
Depth resolution (mm)	0.05 - 0.18	0.020	0.010	0.018	
Lateral resolution (mm)	0.03 - 0.08	0.013	0.009	0.018	
Interface	Ethernet	Ethernet	Ethernet	Ethernet	
EMBEDDED COLOR VIDEO CAMERA					
	Z_3 (mm)	70	57	62	62
	Z_4 (mm)	142	35	48	53
	C (mm)	57	28	58	58
	D (mm)	151	40	87	90
	E (mm)	73	35	77	77
	F (mm)	198	51	115	119
	G (mm)	-	-	63	63
	H (mm)	-	-	95	98
MECHANICAL SPECIFICATIONS					
Dimensions (mm)					
Weight (g)	475	500	800	800	
ENVIRONMENTAL SPECIFICATIONS					
Protection	IP 64 (NEMA 3)				
Operating Temperature	0 - 50 °C (32 - 122 °F)				
Relative Humidity	10 - 95 % Non-condensing				

* CLASS IIIb (CDRH), CLASS 3B (IEC) - Visible Red Laser 661 nm

SERVO-ROBOT

1370 Hocquart, St-Bruno, Quebec, CANADA J3V 6E1
 Tel.: +1-450-653-7868 Fax: +1-450-653-7869 sales@servorobot.com

