



INSPECTION SERVICES AND ENGINEERING CERTIFICATION

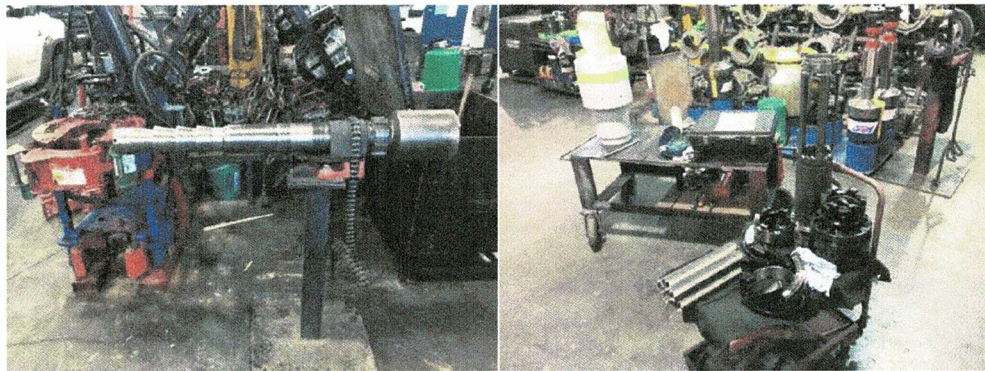
PHONE: 780.870.1547 EMAIL: operations@indexndt.ca Head Office Mail: P.O. Box 10524, Lloydminster, AB T9V 3A6

INSPECTION REPORT

EQUIPMENT LOCATION:	Lloydminster, Alberta				NDT PROCEDURE#:	INSP-001			
EXAMINATION COVERAGE:	RANDOM:	5%	10%	25%	50%	75%	100%	X	
ACCEPTANCE CRITERIA:	CSA W59	ISO 9927-1		CAOEC RP		OTHER:		X	
INSPECTION METHOD:	VT	X	UT	X	MT WET FLOURESCENT	X	MT WET BLACK		MT DRY RED
EQUIPMENT INFO:	BLACK LIGHT MAKE - INOVA			LIGHT METER # 1822158		MAG COIL # RC1-30120121			

CLIENT:	K&S Power Tongs		UNIT/RIG:	KSV009	
EQUIPMENT:	Volant Tool		MAKE/MODEL:	Volant CRTi3-7.0	
REPORT#:	IDX-3079		SERIAL NUMBER:	KSV009	

EQUIPMENT PHOTOS



INSPECTION RESULTS

ACCEPTABLE:	X	REJECTED:	DATE OF INSPECTION:	March 15, 2023
TECHNICIAN:			COMMENTS:	
			Part:	Serial#:
			Mandrel-	82306-03-4501A01-12
			Cage-	82856-4501A02-08
			Upper Cam -	81190-4501A04-14
			Lower Cam -	81191-4501A05-13
			Cam Latch -	80813-4501A06-12
			Cam Int -	80810-4501A03-13
			Die-	80987-02-4448A18-39
			Die-	80987-02-4448A18-40
			Die-	80987-02-4395A20-07
			Die-	80987-02-4589A06-01
			Die-	80987-02-4395A20-14
			MANDREL THICKNESS: 1.307/ 1.305/ 1.305/ 1.302/ 1.301	
REPAIRS: NA				

QUALITY ASSURED INSPECTIONS FOR QUALITY ASSURED BUSINESSES

"Except as provided herein, Index NDT Inspections Ltd. makes no warranty, express or implied with respect to the mechanical or other conditions of the equipment inspected by us. Index NDT Inspections Ltd. shall only be responsible in the event of damage resulting directly from their inspection, and in no event, shall the liability of Index NDT Inspections Ltd. exceed the cost of inspection." Our organization assumes only the responsibility of locating defects in the inspected components and welds made accessible at the time of inspection. All equipment should be cleaned to allow access to all welds and critical components. It is of the utmost importance that the unit's owner be aware that excessive coating over 10 mils can severely mask the detection of discontinuities while utilizing standard inspection techniques. We are not responsible for the mechanical or other conditions assembled condition except at customer's request.

INCLUSION P-POROSITY IUC-INTERNAL UNDERCUT EUC-EXTERNAL UNDERCUT S-SLAG C-CRACK IP-INCOMPLETE PENETRATION NF-NON-FUSION CR-CRACK PH-PIN HOLE D-DISCONTINUITY



REES N.D.T. INSPECTION SERVICES 2008 LTD.



15612-89 Street
Grande Prairie, AB T8V 2N8

Grande Prairie
(780) 539-3594
(780) 532-8047 (Fax)

Dispatch
1-888-540-3594
www.reesndt.com

Vegreville
(780) 603-4887
Email: gcoers@reesndt.com

INSPECTION DATE: 06-Apr-22

CLIENT: K & S Power Tongs
ADDRESS: 3614 63 Avenue Close
Lloydminster AB T9V 2W1

REES NDT PO NUMBER: R68184
CLIENT PO NUMBER: KSV009
REES NDT WO NUMBER: 197662

INSPECTION CERTIFICATE

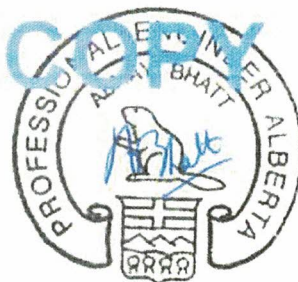
CERTIFICATION OF: CRT Mandrel
MAKE: Volant
MODEL: CRTi3-7.0
SERIAL NUMBER: 82306-03-4501A01-12
UNIT NUMBER: NA
CAPACITY: 320 ton
OWNER: K & S Power Tongs

Rees NDT Inspection Services 2008 Ltd. performed a VISUAL AND NON-DESTRUCTIVE TESTING inspection on the above mentioned CRT MANDREL. All observations have been recorded and are disclosed in the complete documentation for Rees NDT Work Order #197662. The scope of this certificate is limited to the inspection of the item's structural condition at the time of inspection and does not imply a review of the equipment's design or its associated capacity rating. The capacity noted above reflects the original equipment manufacturer's maximum capacity rating and may be reduced by operating conditions, regulatory requirements and the use of auxiliary equipment that has a lower capacity rating.

The undersigned Engineer reviewed all the inspection reports and has issued this certificate after all required repairs (if any) were completed. In the undersigned Engineer's opinion, the CRT MANDREL may be returned to service and is safe to use within the original manufacturer's specifications. The equipment owner is obliged to supply the OEM's operating instructions with the equipment and maintain the OEM's identification and capacity markings. If OEM information cannot be obtained, certified replacements must be obtained from a Professional Engineer.

This certification covers the above mentioned unit for a period of 1 YEAR from the date of inspection, or until the unit is damaged by handling, transportation or operation.

Reviewed
By



12-Apr-2022

PERMIT TO PRACTICE	
REES NDT ENGINEERING LTD	
Signature	
Date	12-Apr-2022
PERMIT NUMBER: P 11509	
The Association of Professional Engineers and Geoscientists of Alberta	



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LOAD TEST CERTIFICATE

Owner K & S Power Tongs
Address 3614 63 Avenue Close
Lloydminster AB T9V 2W1

Date 06-Apr-22
Workorder # 197662
Purchase Order# **K3V009**

Contact Name:	Chris	Phone #:	(780) 872-8240
Item:	CRT Mandrel	Location:	Rees NDT Shop, Grande Prairie
Make:	Volant	Model:	CRTi3-7.0
Serial Number:	82306-03-4501A01-12	Unit:	NA
Capacity:		320 ton	

Proof Load Test 704000 lbs

Test Date 06-Apr-22

Required Duration (sec) 300

Test Method: Proof 1.10

Peak Load 705845 lbs

Passed ☒

Test Equipment:

Make:

Model:

Serial Number:

Capacity:

Testing Frame

Volker Ries

525 ton

VR-01

525 ton

Pressure Gauge

Rosemount

3501

-

(0-5000) psi

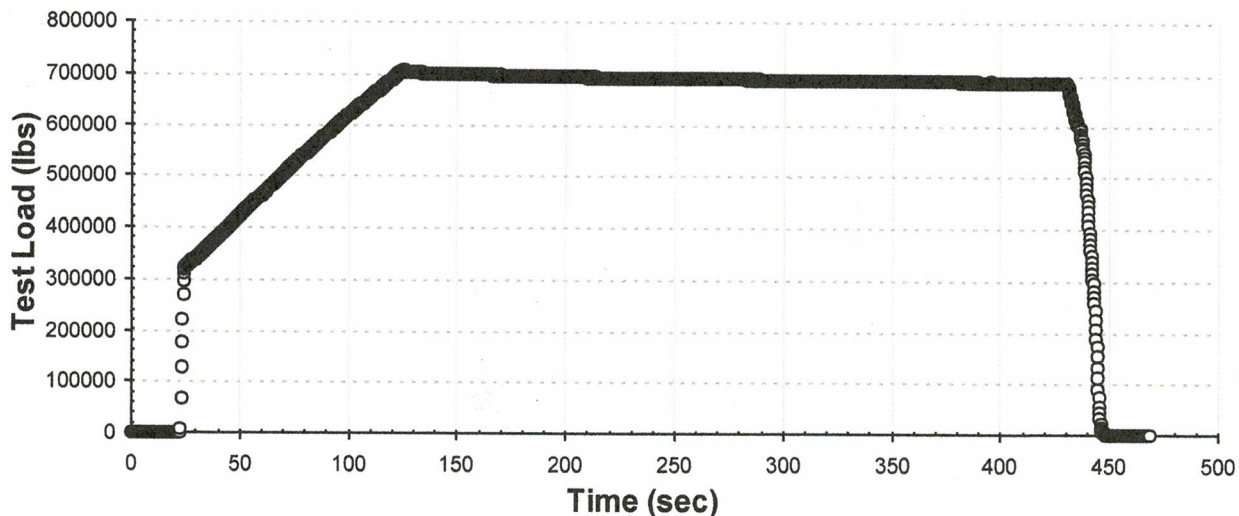
Data Logger

ACR Systems

SRP-7-32K 0-25MA

96674

(0-25 mA)

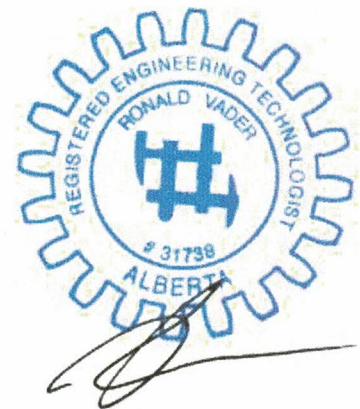


DELAYED USE

Date of 1st Use: June 15, 2022

Job #: WLEC

Signed By: [Signature]



Inspected By: K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. House CGSB #20221 (MPI II) SNT #028 (MPI II)

Rees NDT Records



REES N.D.T. INSPECTION SERVICES 2008 LTD.



- Non-Destructive Testing • UT MPI LPI
- Wall Thickness Testing • Hardness test
- Crane and Picker Certification
- Drilling Rig Certification
- Materials Consulting
- Failure Analysis
- Corrosion Monitoring
- Weld Procedures (WPS, PQR)
- Quality Control
- Predictive Maintenance
- Computer Generated Drawings (CAD)

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15612-89 Street Grande Prairie AB T8V 2N8

email: ronvader@reesndt.com

Consigned to K & S Power Tongs

Date 06-Apr-22

Address 3614 63 Avenue Close
Lloydminster AB
T9V 2W1

Workorder 197662

Purchase Order#

Location Rees NDT Shop, Grande Prairie

Customer K & S Power Tongs

Eng Certification - Visual - Fluorescent Magnetic Particle - Ultrasonic - Load Test

Contact Name:	Chris	Phone #:	(780) 872-8240
Item:	CRT Mandrel	Location:	Rees NDT Shop, Grande Prairie
		Model:	CRTi3-7.0
Make:	Volant	Unit:	NA
Serial Number:	82306-03-4501A01-12	Capacity:	320 ton

Field Report

RESULTS OF INSPECTION IN ALL ACCESSIBLE AREAS:

Rees NDT Inspection Services 2008 Ltd. performed a Visual, Wet Fluorescent Magnetic Particle Inspection, Wall Thickness Test and Load Test on the above mentioned CRT Mandrel. Mandrel was cleaned of paint, oil and grease prior to inspection. Mandrel was demagnetized at the time of inspection. See attached pictures.

MPI Inspection:

Procedure: MPI-ASTM E709 Rev 0, Jan 22, 2019
Technique: MT-3 Wet Fluorescent Magnetic Particle
Acceptance Standard: API-8C
Surface Prep: Bare Metal / Machined
Material: Carbon Steel

NDT Inspection Results:

Pre Load Test - CRT Mandrel: No relevant indications or damage was noted at the time of inspection. 4 1/2" IF Box Plug Gauge Passed.

Post Load Test - CRT Mandrel: No relevant indications or damage was noted at the time of inspection.

5-Wall Thickness Readings Taken: 1.246", 1.245", 1.248", 1.244", 1.246" Average Thickness: 1.246"

Areas scanned around and lowest readings recorded.

O.D. was measured at the same spot as wall thickness readings: O.D. 3.990"

Calibrated Equipment Used Blacklights: BL-30-00 Cal Blocks: 01-7186 Cal Blocks: UT-CB-74-00 Wet Benches: WB-02-00 UT Machines: USU-23-00 Digital Calipers & Micrometers: DVC-34-00

Inspected By: K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. House CGSB #20221 (MPI II) SNT #028 (MPI II)

Rees NDT Records

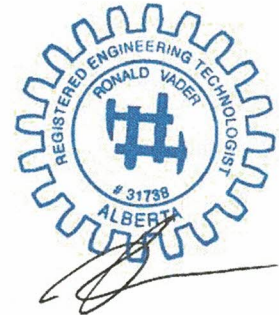
Received by:

AR = 0.1% = Passed,
calculated with CRT maintenance procedure Appendix B mandrel neck area calculation.

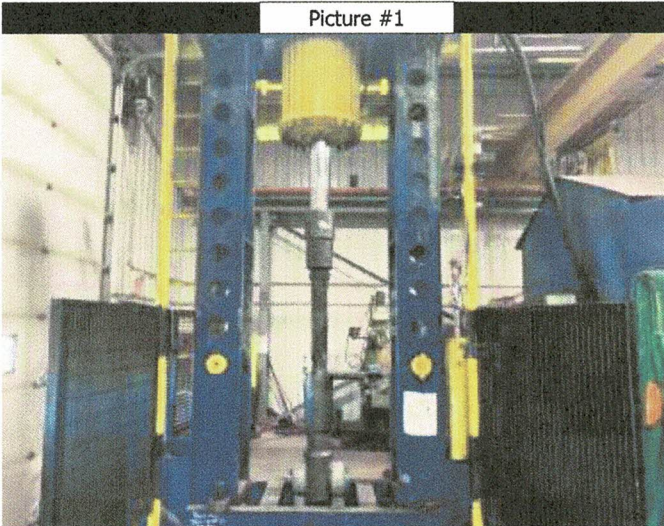
This inspection and compliance certification covers items supplied for inspection.
Customer is responsible for PLC / mechanical components, and proper function of tool.

Equipment Used:

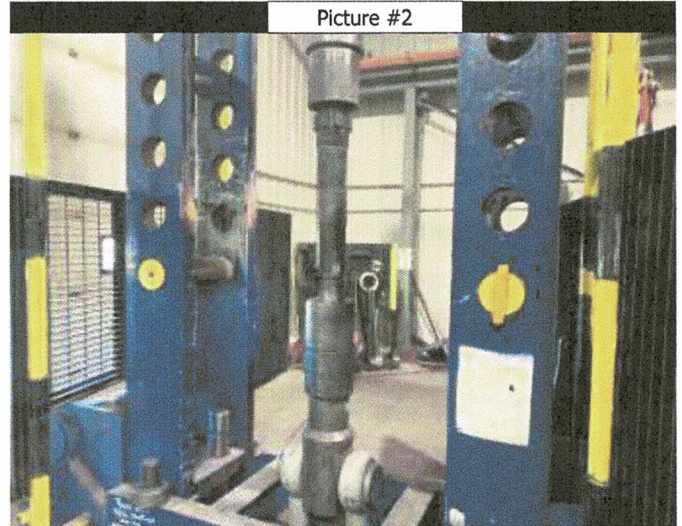
- Spectroline BIB-150P (BL-30-00 - 1910553) Calibration Due: 30-Jul-2022
- DCM Wet Bench (WB-02-00 - 37941) Calibration Due: 05-Apr-2022
- Krautkramer USN-58L SW (USU-23-00 - 023K45) Calibration Due: 03-Jun-2022
- DS Block with Case (01-7186 - 01-7186) Calibration Due: 31-Dec-2099
- 0.250" - 1.000" 4 Step Curve (UT-CB-74-00 - UT-CB-74-00) Calibration Due: 31-Dec-2099
- Digital Vernier Caliper (DVC-34-00 - 0012982) Calibration Due: 07-Jun-2022
- Magnaglo 14A Fluorescent Magnetic Particles Batch #21E020



Picture #1



Picture #2



Calibrated Equipment Used Blacklights: BL-30-00 Cal Blocks: 01-7186 Cal Blocks: UT-CB-74-00 Wet Benches: WB-02-00 UT Machines: USU-23-00 Digital Calipers & Micrometers: DVC-34-00

Inspected By: K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. House CGSB #20221 (MPI II) SNT #028 (MPI II)

Rees NDT Records

Received by: _____