

FRAC SHACK™

HAND OVER AGREEMENT		DATE: 03-12-19
FRAC SHACK UNIT: XP76	TRAILER:	PLATE:
GENERATOR UNIT:	TRAILER:	PLATE:
RT UNIT:	TRAILER:	PLATE:
OTHER:	OTHER:	OTHER:

FROM: FRAC SHACK Inc	TO: FRAC SHACK International
Rob Metzinger	Dustin Neubauer
RESPONSIBLE REPRESENTATIVE	RESPONSIBLE REPRESENTATIVE

✓	Production documentation provided by FSH	✓	Reviewed by FSI/FSA
✓	Initial demob documentation provided by FSH	✓	Reviewed by FSI/FSA
		✓	Demob verified by FSI/FSA
✓	Frac Shack unit visually inspected by FSH	✓	Visually inspected by FSI/FSH
✓	Generator unit tested/visually inspected by FSH	✓	Inspected by FSI/FSA
N/A	NG Reel trailer inspected by FSH (if applicable)	N/A	Inspected by FSI/FSA

NOTES AND DEFICIENCIES:
Control panel alarm unplugged
Diesel spill on floor → clean

ACTIONS TAKEN OR REQUIRED:	
Alarms plugged in MG	COMPLETED 03/12/19
Floor cleaned MG	COMPLETED 03/12/19
	COMPLETED _____
	COMPLETED _____

APPROVED FOR HAND-OVER

FSH APPROVAL STAMP OR	
	03/18/19
SIGNATURE:	DATE:

FSI APPROVAL STAMP OR	
	03/12/19
SIGNATURE:	DATE:

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

VISUAL CHECKLIST

☒ 2" Butterfly valve on pump inlet is installed
☒ 10HP Motor, Gearbox and Pump assembly mounted and aligned
☒ Gear pinch point cover installed between pump and motor
☒ 3/4" TOL for temperature switch is present on pipe spool between pump and flow meter
☒ 3 Port 2-Way ball valve installed on pipe spool after flow meter
☒ Cimtek triple filter housing installed on pipe spool
☒ 2x 4" Winter 300LB Pressure gauges mounted on pipe spool, one on each side of flow meter
☒ 567LPM flow meter mounted, bolted to stand and facing towards the inside of the skid
☒ Flow direction of flow meter confirmed to be correct and flowing towards fuel manifolds
☒ 2" Butterfly valves installed in pipe spool for each fuel rail manifold (left manifold and right manifold)
☒ Hose roller guides mounted on the bottom of the reel rack (2 for each side Left/Right)
☒ Anti-slip coating present on flooring
☒ Plug is present in the secondary containment valve.
☒ Control panel mounting bracket is installed, welded to skid and welded to reel rack for support
IF ANY OF THE ITEMS ABOVE ARE NON-CONFORMING AND THE ACTION ITEM DOES NOT OR WILL NOT CORRECT THE NON-CONFORMANCE, PLEASE NOTE THE ISSUE IN COMPLETE DETAIL BELOW AND INFORM YOUR SUPERVISOR FOR CORRECTION AND FOLLOW UP.

ASSEMBLER NOTES

INSPECTOR OR SUPERVISOR NOTES

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

PHYSICAL CHECKLIST

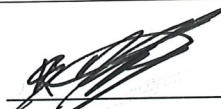
☒	All nuts and studs on piping and manifold flanges have been checked for tightness with wrenches
☒	All threaded unions have been checked for tightness with pipe wrench
☐	Install 2" cap on pump inlet if not already present
☒	Install 2" cap on two-way ball valve if not already present
☒	Install plugs into all TOL ports on the fuel manifolds with thread tape and pipe dope
☐	Remove triple filter canisters to confirm filter elements have been installed
☒	Reset flow meter to all zeros.
☒	Apply pinch point decal to gear box/pump guard.

EQUIPMENT RECORD

Equipment	Manufacturer	Model #	Serial #
Motor Record	Marathon Motors	TKR21STFND16953AAL	M65116086-1 09/2007
Gearbox Record	~~TKR21STFND16953AAL~~ Bonfiglioli	COD 2E151106Q1	0818000896371001
Pump Record	Blackmer	TXD2 SA	2188715 18/09
Flow Meter Record	Total Control Systems	700-2SSPA2AL2	871602

ASSEMBLER NOTES

INSPECTOR OR SUPERVISOR NOTES


Assembler Signature

03/12/19
Date


Inspector Signature

2/17/19
Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

PRE-INSTALLATION CHECKLIST

☒ All reels inspected for damage and operation	☐ Tools are available, clean and inspected
☒ Properly trained and comfortable to perform this task	
STOP – If all the above are not checked stop this task and see your area supervisor or manager.	

INSTALL CHECKLIST

	1	2	3	4	5	6	7	8
No visible signs of damage on reel	☒	☒	☒	☒	☒	☒	☒	☒
Reel spins/turns freely without contacting	☒	☒	☒	☒	☒	☒	☒	☒
Swivel is not equipped with grease nipple	☒	☒	☒	☒	☒	☒	☒	☒
Reel is equipped with left hand crank	☒	☒	☒	☒	☒	☒	☒	☒
All bolts installed with a washer on each side and nylock nuts have been used	☒	☒	☒	☒	☒	☒	☒	☒
Reel number label applied to reel on bottom left corner	☒	☒	☒	☒	☒	☒	☒	☒

COMPONENT RECORDS

	HANNAY REEL MODEL #	HANNAY REEL SERIAL #
Line 1	6018-33-34 LB	2739284
Line 2	6018-33-34 LB	2739301
Line 3	6018-33-34 LB	2739865
Line 4	6018-37-34 LB	2739905
Line 5	6018-33-34 LB	2724737
Line 6	6018-33-34 LB	2724748
Line 7	6018-37-34 LB	2739367
Line 8	6018-37-34 LB	2739348

Notes:

DWC

Assembler Signature

Date

[Signature]
Inspector Signature

2/17/19
Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

FUEL RAIL BUILD RECORD

PRE-BUILD CHECKLIST

☒ Workbench is clear from unnecessary clutter	☒ Tools are available, clean and inspected
☐ Properly trained and comfortable to perform this task	
STOP – If all the above are not checked stop this task and see your area supervisor or manager.	

BUILD CHECKLIST

	1	2	3	4	5	6	7	8
Thread tape & dope used on all threads	☒	☒	☒	☒	☒	☒	☒	☒
Ball valve packing tightened and tested	☒	☒	☒	☒	☒	☒	☒	☒
Solenoid valve arrows pointing in direction of flow	☒	☒	☒	☒	☒	☒	☒	☒
Turbine meter arrows pointing in direction of flow	☒	☒	☒	☒	☒	☒	☒	☒
Fuel rail has been numbered	☒	☒	☒	☒	☒	☒	☒	☒

COMPONENT RECORDS

	Turbine Serial	Calibration Factor
Line 1	135296	864.26 SJ
Line 2	135133	827.72 SJ
Line 3	132997	846.56 RE
Line 4	132992	847.10 RE
Line 5	135292	868.76 SJ
Line 6	132993	862.32 SJ
Line 7	135295	852.00 RE
Line 8	132985	860.77 RE

Assembler Signature

Date

Inspector Signature

Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

HOSE INSTALLATION RECORD

PRE-INSTALLATION CHECKLIST

☒ Work area is clean and uncongested	☒ Tools are available, clean and inspected
☒ Properly trained and comfortable to perform this task	
STOP – If all the above are not checked stop this task and see your area supervisor or manager.	

INSTALL CHECKLIST

Task List	1	2	3	4	5	6	7	8
Install 1" to ¾" bushing	☒	☒	☒	☒	☒	☒	☒	☒
Install ¾" hose swivel fitting into reel bushing	☒	☒	☒	☒	☒	☒	☒	☒
Reel 250ft of ¾" BC Cold flex hose on to each hose reel.	☒	☒	☒	☒	☒	☒	☒	☒
Install ¾" male DNP fitting on the end of each line.	☒	☒	☒	☒	☒	☒	☒	☒
All connections were made using thread tape and pipe dope	☒	☒	☒	☒	☒	☒	☒	☒
Ensure the reel number label is applied to the reel identifying the reel number in lower left-hand corner.	☒	☒	☒	☒	☒	☒	☒	☒
Use grease / paint marker to label hose end and quick connect identifying the line/reel number.	☒	☒	☒	☒	☒	☒	☒	☒

Notes:

Assembler Signature

Date

Inspector Signature

Date

WALL STRUCTURE ASSEMBLY RECORD

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

PRE-BUILD CHECKLIST

☒ Work area is clear from clutter	☒ Tools are available, clean and inspected
☒ Two people required for this task	☒ Additional PPE and Hazards identified
☒ Power tools inspected for cleanliness, condition and operation. Failed components replaced.	
☒ Main builder is properly trained and comfortable to perform this task and offer mentoring and instruction to secondary builder if required.	
☒ Secondary builder understands task, risks and hazards and is comfortable to proceed.	
STOP – If all the above are not checked stop this task and see your supervisor or manager.	

BUILD CHECKLIST

☒ Bottom "C" channel installed with self-tapping screws used every 6 inches into skid floor.
☒ Vertical panels secured in bottom channel every 8 inches with self-sealing rivets.
☒ All wall panels installed between tongue and grooves and secured to each other on the seams every 8 inches with self-sealing rivets on exterior.
☒ Wall panels secured to each other on the seams every 8 inches on interior with self-sealing rivets.
☒ Corner flashing installed on each corner between panels and secured to panels on each side every 8 inches with self-sealing rivets.
☒ Roof flashing fastened to walls every 8 inches with self-sealing rivets.
☒ Roof flashing fastened to roof panels every 8 inches with self-sealing rivets.
☒ Roof panels secured to each other on seams every 8 inches except for centre 3 ft with self-sealing rivets
☒ Seam tape applied and rolled securely on to all roof panel seems and flashing edges.
☐ First coating of liquid rubber applied in a thick, heavy coating using one full bucket.
☒ Doorway cut out (verify cut-out size and location by reviewing equipment drawings)
☒ Door mounted in door frame
☒ Door check chain outfitted with clip for quick disconnection
☒ Door handle hardware installed and tested

CUT OUTS

☒ Four cut outs for exterior light fixtures	☒ One cut out for 2" line inlet
☒ One cut out for control panel door	☐ Two hose distribution cut outs
☒ One power receptacle cut out	
(verify cut-out size and location for all above by reviewing equipment drawings)	

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

COMPONENT MOUNTING

☒	Four exterior light fixture housings have been installed and sealed with caulking on exterior
☒	Exterior antenna's have been mounted (Base Engineering and Schneider Electric)
☒	Exterior IP67 Modem mounted
☒	Sensor head mounting system installed

FLASHING

☒	All cut-outs have been flashed
☒	Man door cut out has been flashed
☒	Four exterior light fixtures have been flashed on the interior to cover bottom gap

SEALING / CAULKING

☒	Exterior light fixtures have been caulked on the interior of building
☒	Exterior antenna hole has been filled with butyl

ACCESS DOORS

☒	2" Inlet access door has been built, flashed and installed with barrel bolt and rubber tie
☒	2 x Hose distribution access doors have been built, flashed and installed with barrel bolts, handles and ties

ASSEMBLER NOTES

DATE:

Main Assembler Signature

Date

Secondary Assembler Signature

Date



DATE:

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

FILLER HEAD ASSEMBLY RECORD

PRE-BUILD CHECKLIST

☒ Workbench is clear from unnecessary clutter	☒ Tools are available, clean and inspected
☒ Properly trained and comfortable to perform this task	
STOP – If all the above are not checked stop this task and see your area supervisor or manager.	

FILLER COMPONENTS

Each Patented fuel filler head contains	
☒ 3" Machined Filler Head	☒ Breather with 90° elbow
☒ Ball Valve to 45° elbow for fill inlet	☒ Male Camlock 3/4" on Breather
☒ Female Dry-disconnect	☒ 48" Fuel Overflow / Vent Hose "Spit Tube"
☒ 24" Fuel Stinger Hose	

BUILD CHECKLIST

	1	2	3	4	5	6	7	8
Thread tape & dope used on all threads	☒	☒	☒	☒	☒	☒	☒	☒
Ball valve packing tightened and tested	☒	☒	☒	☒	☒	☒	☒	☒
Ball valve is facing up towards operator and the handle points down when open	☒	☒	☒	☒	☒	☒	☒	☒
Accutech sensors installed and programmed appropriately based on shack unit number	☒	☒	☒	☒	☒	☒	☒	☒
Fuel head labelled with shack number and unit ID number	☒	☒	☒	☒	☒	☒	☒	☒

COMPONENT RECORDS

Line 1 Accutech Serial #	<u>5273347</u>	Line 5 Accutech Serial #	<u>5262260</u>
Line 2 Accutech Serial #	<u>5254687</u>	Line 6 Accutech Serial #	<u>5273690</u>
Line 3 Accutech Serial #	<u>5273683</u>	Line 7 Accutech Serial #	<u>5266365</u>
Line 4 Accutech Serial #	<u>5273689</u>	Line 8 Accutech Serial #	<u>5273615</u>

Wesley Taylor Feb 26, 2019
 Assembler Signature Date
[Signature] 03/12/19
 Inspector Signature Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

ELECTRICAL INSPECTION

Electrical installation is to be preformed by a journeyman electrician or registered apprentice working off of the electrical drawings and design layout as work instructions. This is a skilled trade subject to external regulations and requirements thus outside the scope of this check list. The below are items to be inspected after the electrical installation has been completed for quality assurance only.

ELECTRICIAN SIGN OFF

☒	All conduits/flexes/cables are properly installed (5 threads) and straight
☒	All conduit/flex/cable straps are tight and within proper distance
☒	All terminations in CP are tight and properly tagged
☒	All terminations in Power Disconnect panel are tight
☒	All terminations in devices are tight and properly tagged
☒	Screw-on fittings and covers are properly lubricated with STL or HTL
☒	ESD, bonding and interconnected to E-Unit where applicable

VISUAL ELECTRICAL INSPECTION

☒	XP Lights (interior and exterior) installed and functional (4 ext., 1 int.)
☒	All panels hung properly and are secured
☒	All devices installed correctly and secured
☒	All conduit/flex/cable connectors, fittings, and hubs are tight
☒	All fittings have covers installed and tightened
☒	No visible scarring or damage to cables, wires, or conduits
☒	Holes around conduits and fittings exiting shack are sealed

COMPONENT POWER UP

☒	Power to UPS
☒	UPS Battery Charging System OK
☒	Power to PLC
☒	Power to BR20
☒	Power to Base Engineering unit
☒	Power to CP Ventilation fan and thermostat set to 20C (blows out)
☒	Power to CP Heater and thermostat set to 5C
☒	Power to VFD
☒	Power to Shack Heater and thermostat set to 5C

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

GROUND CONNECTIVITY TESTING

- ☒ Preformed on hoses
- ☒ Preformed on Frac Shack
- ☒ Preformed on Reels
- ☒ Preformed on Grounding

Unit #: XP 76
 INSTALL DATE: Mar 12, 2019
 SIM: 89302690201006821261
 PH: 15879151952
 WAN: 76.70.221.185

ACCESSORIES

- ☒ Included Electrical Service Kit consisting of:

5 x ATM 10A Fuses	10 x GMA 100mA Fuses	5 x GMA 500mA Fuses
10 x GMA 1A Fuses	5 x GMA 2A Fuses	10 x 5A Fuses
5 x GMA 6A Fuses	1 x Suppressor Gas Fuse	1 x Multimeter
1 x Terminating Screwdriver	1 x Philips Screwdriver	5 x GMA 250 mA Fuses
2 x Battery Blade Fuses	3 X Disconnect fuses (in disconnect)	

ELECTRICAL NOTES

EQUIPMENT PROGRAMMING

☒ PLC Programmed and functional	
Program Used	Version
<u>HPX</u>	<u>1.18</u>
☒ HMI Programmed and functional	
Program Used	Version
<u>HPX</u>	<u>Feb 27 19</u>

☐ GP-Viewer Key Code installed in HMI (7683-6990-8224)	<u>N/A</u>
☐ BR20 Radio Programmed and functional – Channel	<u>180</u>
☒ VFD Programmed and functional	
☒ Modem installed and functional	
☐ Modem program uploaded (XP-Series VIP4G)	<u>N/A</u>
☒ Modem IP set to shack number (128.1.XX.30)	<u>30</u>
☐ Modem shows "ONLINE" in HMI status	<u>N/A</u>

[Signature] Mar 12, 2019
 Electrician Signature Date
[Signature] Mar 12, 2019
 Inspector Signature Date
 Issue Date: October 31, 2016 PAGE 11 Revision Number: 1

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

FINAL PREPARATION

BASIC FUNCTION TESTING

☒ Solenoid function testing via HMI (Line 1, Activates Solenoid 1, etc.)
☒ Pump turns on and operates with proper rotation
☒ Pump remote control functions and activates pump
☒ BR20 reports all heads online, all heads reporting online on HMI
☒ Panel ESD button function properly
☒ Level switch functions properly

ADVANCED FUNCTION TESTING

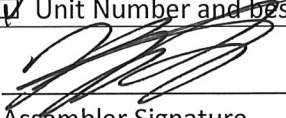
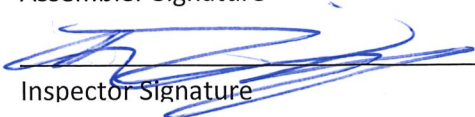
☒ Modem remote connectivity tested
☒ Remote connectivity to PLC tested
☒ Remote connectivity to HMI tested
☒ Manual remote pump operation tested (Base engineering receiver)

SHACK PREPARATION

☒ Day tank fill and suction camlock installed, complete with caps
☒ 2" Female camlock installed on inlet with cap
☒ 33" double female fuel hose from day tank to shack cut to fit complete with plugs
☒ 2" female camlock installed on 3 port 2-way ball valve with cap
☒ Verify all holes in piping and manifold are filled / plugged
☒ 4 x BC Cold Flex 75ft extensions in shack, complete with male and female disconnects
☒ Verify all hose lines have 3/4" dry disconnect male ends installed
☒ Verify all lines are clearly labelled and easy to identify (Line 1, Line 2, Line 3, etc.)

EXTERIOR INSPECTION

☒ Frac Shack™ Logo and FracFueller™ Logo on both Diesel unit and daytank
☒ Correct telephone number if shack is for US/Canada – If unknown, left blank
☒ Canadian, US and Australian patent decal present
☒ Unit Number and best managed present


Assembler Signature03/12/19
Date
Inspector Signature03/12/19
Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

ACCUTECH SENSOR HEAD TESTING

1. Turn "ON" Accutech sensor heads one at a time, starting with number 1.
2. Look at the HMI to ensure line 1 on the screen becomes enabled and shows online.
3. If correct, install sensor head into the test tank as required and repeat for the next head.
4. Continue procedure until all heads are online and tested as operational.
5. When successful and all heads are functioning as expected, initial each line number below.

LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6
AT	AT	AT	AT	AT	AT
LINE 7	LINE 8	DAYTANK			
AT	AT	N/A.			

TURBINE METER CALIBRATION

TURBINE CALIBRATION FACTORS

LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6
AT	AT	AT	AT	AT	AT
LINE 7	LINE 8				
AT	AT				

HMI "K" FACTOR ENTRY RECORD

The following values were entered into the HMI for volume calculations.

LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6
AT	AT	AT	AT	AT	AT
LINE 7	LINE 8				
AT	AT				

*USE COMMISSION TEST PROCEDURE 7.0 TURBINE CALIBRATION SPREADSHEET [FORM PA-6014] TO GENERATE APPROPRIATE HMI K FACTOR. ATTACH PRINTED SPREADSHEET WITH TURBINE CALIBRATIONS.

Assembler Signature

Date

03/12/19

Inspector Signature

Date

03/12/19

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

PRIME FUEL PUMP

See Commission Test Procedure 2.0 for detail and procedure.

☒ This process followed appropriately as set out in instructions.

INITIATE ALL FUEL LINES

See Commission Test Procedure 3.0 for detail and procedure.

☒ This process followed appropriately as set out in instructions.

PRESSURE AND LEAK TEST

See Commission Test Procedure 4.0 for detail and procedure.

☒ This process followed appropriately as set out in instructions.

MANUAL MODE TEST HH

See Commission Test Procedure 6.0 for detail and procedure.

☒ This process followed appropriately as set out in instructions.

TEST BUZZER

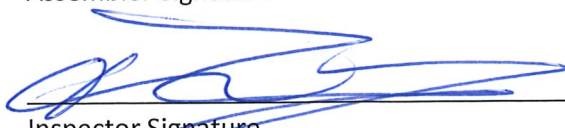
☒ The buzzer is working



Assembler Signature

03/12/19

Date



Inspector Signature

03/12/19

Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

FUEL METER ACCURACY RECORD

Reset main inlet flow meter to 0, reset lines to 0, run a 500L flow test on each line and record the results below. Reset all meters back to 0 before testing the next line. HMI "k" factor must be entered before running this test.

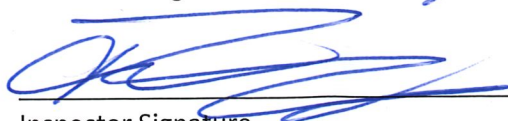
LINE 1		LINE 2		LINE 3	
FLOW METER	TURBINE	FLOW METER	TURBINE	FLOW METER	TURBINE
100	107.2	100	107.3	100	109.5

LINE 4		LINE 5		LINE 6	
FLOW METER	TURBINE	FLOW METER	TURBINE	FLOW METER	TURBINE
100	109.6	100	105.9	100	108.0

LINE 7		LINE 8	
FLOW METER	TURBINE	FLOW METER	TURBINE
100	110.9	100	109.4


Assembler Signature

03/12/19
Date


Inspector Signature

03/12/19
Date

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

LINE	OPERATING PRESSURE	DEADHEAD PRESSURE	FLOWMETER L/PM	ISSUES FOUND AND ACTIONS REQUIRED IF NO ISSUES FOUND ON A LINE WRITE "GOOD" IN THIS FIELD THEN INITIAL AND DATE THE LAST COLUMN	ACTION COMPLETED	INITIAL & DATE
1	75	80	41.2		good	KPB 03/12/19
2	75	80	40.4		good	KPB 03/12/19
3	75	80	41.5		good	KPB 03/12/19
4	75	80	40.1		good	KPB 03/12/19
5	75	80	~~41.5~~ 37.5		good	KPB 03/12/19
6	75	80	~~41.5~~ 36.5		good	KPB 03/12/19
7	75	80	39.6		good	KPB 03/12/19
8	75	80	40.1		good	KPB 03/12/19

TESTING NOTES

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

FUNCTION TEST

- See Commission Test Procedure 5.0 for full detail and procedure.
- **REMINDER:** Set Time/Date and Start New Project in Site/Config

HH – HIHI Level (Overfill)	H – HI Level (Stop)
LL – LOLO Level (Fill)	M – Manual Mode Test

LINE 1	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 2	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 3	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 4	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 5	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 6	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 7	HH	✓
	H	✓
	LL	✓
	M	✓

LINE 8	HH	✓
	H	✓
	LL	✓
	M	✓

- ☒ End Job 1/Stage 1, start stage 2, run 100% through all lines at the same time.
- ☒ End stage 2, finish project and manually poll shack data and attach report to documentation. *N/A*

[Signature] 03/08/19
 Tester Signature Date

[Signature] 03/08/19
 Tester Signature Date

INVENTORY PACKING/DEMOB

☒ Greggs XP Supply Skid
☐ Attach Greggs supply skid packing slip at the end of this document <i>N/A</i>
☒ Attached completed demob at the end of this document

[Signature] 03/12/19
 Demob completed by: *Kurtis Patey-Brown* Date

Demob sheet in E-127 Binder

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

HAND OVER AND DOCUMENT PACKAGE

- ☒ Reviewed production checklist for completeness and accuracy
- ☒ Completed hand over document (PA-6012) to transfer equipment to operating company

Form [PA-6012 Handover](#)

COMMISSION TEST PROCEDURES

1.0 ACCUTECH SENSOR HEAD TESTING

6. Turn "ON" Accutech sensor heads one at a time, starting with number 1.
7. Look at the HMI to ensure line 1 on the screen becomes enabled and shows online.
8. If correct, install sensor head into the test tank as required and repeat for the next head.
9. Continue procedure until all heads are online and tested as operational.
10. When successful and all heads are functioning as expected, initial each line number below.

2.0 PRIME FUEL PUMP

1. Connect the fuel lines to the appropriate sensor heads (filler heads) XP: Line 1 to head 1, line 2 to head 2, etc.
2. Fill inlet hose to the pump with diesel from a Jerry can or other source as applicable. Pay close attention to not over fill the hose and have spill containment and absorbent pads near by.
3. Once you have put diesel in the inlet hose, pull the hose up to diesel the fuel into the pump. This will help lubricate the pump, vanes and seals. This helps the pump create suction and be able to pull fuel out of the daytank.
4. Carefully reconnect the inlet hose to the daytank suction port.
5. Ensure the suction valve is open, the pump inlet valve is open, manifold valves are open and the valve on sensor head 1 is open.
6. Put the shack into "Manual Mode" and enable line one.
7. Activate pump with the remote control to allow the pump to start sucking fuel from the daytank, this may take up to a minute until you have a smooth fuel flow.
8. Once the pump and line are primed, stop the pump.

3.0 INITIATE ALL FUEL LINES

1. Put the shack into "AUTO" mode and allow fuel to flow on all lines to remove the air out of the system and prime the entire manifold and all fuel lines.
2. Once steady flow on all lines is established put the shack into "PUMP DISABLED" mode.

4.0 PRESSURE AND LEAK TEST

1. Put shack into "MANUAL" mode and enable line 1.
2. Press the start button on the remote to begin fueling.
3. Once steady flow is established;

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

- a. Note the flow rate of the fuel line from the HMI and record it on the table below. **IF BELOW 45L/M INFORM SUPERVISOR.**
- b. Note the operating pressure on the pressure gauges by the flow meter and record it on the table below.
4. Have an assistant close the sensor head valve on line 1.
 - a. Note the “Deadhead” pressure on the pressure gauges by the flow meter and record it on the table below.
5. Close the valve on the fuel rail of line 1.
6. Press the stop button on the remote to stop the pump. You have now pressurized the fuel rail, reel and hose assembly.
7. Repeat this process (steps 1 – 5) on all remaining lines until every line has been completed and is pressurized.
8. Carefully look for leaks starting at the fuel rails for each line, check the reels and hose for leaks and then inspect the fuel sensor heads (filler heads).
9. Make a note of all issues found below, including as many details as you can then release the pressure by opening all the valves on the fuel rails and at the sensor heads.
10. Make repairs to the lines as necessary, noting the repairs made below and retest the faulty line(s) as required. Use the same procedure above until all lines are functional without any leaks.

5.0 FUNCTION TEST

1. Set time/date on HMI
2. On the HMI go to “VOLUME TOTALS” -> “CONFIGURE STAGE/JOB” and start a new project using these details below:
PROJECT NAME: “XPXX” BOL XX is to be replaced by the unit number example (XP21 BOL).
CLIENT NAME: FRAC SHACK INC
3. Select Job 1, Stage 1, press “CONFIRM” then “START TOTALIZING”.
4. On HMI go to “TANK DETAIL” and ensure all tanks are set to default set points.

URV 25.0	HH 17.0	STOP 15.0	START 11.0	LL 9.0	LRV 0.0
----------	---------	-----------	------------	--------	---------

5. Ensure the test trailer tanks are empty, if not pump out the tanks and turn off the pump.
6. Put shack into “AUTO” mode and enable line 1.
7. You should see a “LO” alarm and the pump will kick in and begin filling.
8. Once the line hits 15” ensure line shuts down.
9. Empty the test trailer tanks again, once empty turn off the trailer pump and test the remaining lines (2 – 12) using the same steps above (step 5 -7).
10. Once complete, pick two lines (each line must be in a separate tank of the test trailer) and switch them for the cross over line test. Example: connect line 1 to filler head 5.
11. Enable line 1 to begin filling. The HMI will not show an increasing fuel level on line 1, but it will show an increasing level on line 5.
12. When line 5 hits the HH level (17”) you will receive an HH alarm, and the pump will shut down. This test was successful.
13. Record the testing results on the table below.

PR-6005 – XP PRODUCTION AND ASSEMBLY CHECKLIST SKID DELIVERY AND INSPECTION RECORD

6.0 MANUAL MODE HIGH HIGH TEST

1. Drain fuel tanks below preset High High level of 17".
2. Turn on Sensor head and put into tank.
3. In manual mode use demob manual nozzle to fill tank until High High alarm sounds.

7.0 TURBINE CALIBRATION

1. Gather all calibration sheets for all lines, numbered to correspond with Fuel rail it is installed in, record in check sheet.
2. Verify K-Factor on actual meters to ensure meter # and calibration sheets match.
3. Use a computer to pull up Excel sheet called "Calibration Factor Calculator" in the Master Document List.
4. Type the K factors found on the sheet to the boxes assigned to them in the excel sheet. Repeat until all lines calculated. Print sheet. (See Image 1)
5. Take "calibration Factor" that was calculated and record on K factor sheet in the check sheets binder.
6. Log into shack as admin on HMI, in "meter Details" screen where calibration factor listed, change each line to the new factor that has been calculated. (Image 2)
7. Save changes log out. shut down control panel, Power back up, confirm changes saved.
8. Include sheet in build binder.

Image 1

Turbine "K" Factor Calculator

	Meter K Factor	HMI Input
Line 1	847.33	0.004467445
Line 2	900.21	0.004205019
Line 3	875.33	0.004324540
Line 4	847.33	0.004467445
Line 5	900.21	0.004205019
Line 6	875.33	0.004324540
Line 7	847.33	0.004467445
Line 8	900.21	0.004205019
Line 9	875.33	0.004324540
Line 10	847.33	0.004467445
Line 11	900.21	0.004205019
Line 12	875.33	0.004324540
Line 13	847.33	0.004467445
Line 14	900.21	0.004205019
Line 15	875.33	0.004324540
Line 16	847.33	0.004467445
Line 17	900.21	0.004205019
Line 18	875.33	0.004324540
Line 19	847.33	0.004467445
Line 20	900.21	0.004205019
Line 21	875.33	0.004324540
Line 22	847.33	0.004467445
Line 23	900.21	0.004205019
Line 24	875.33	0.004324540
Line 25	847.33	0.004467445
Line 26	900.21	0.004205019
Line 27	875.33	0.004324540
Line 28	847.33	0.004467445

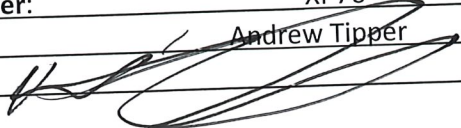
Image 2



FRAC SHACK™

Turbine "K" Factor Calculator

	Meter K Factor	HMI Input
Line 1	864.26	0.004379932
Line 2	827.72	0.004573286
Line 3	846.56	0.004471508
Line 4	847.1	0.004468658
Line 5	868.76	0.004357245
Line 6	862.32	0.004389786
Line 7	852	0.004442958
Line 8	860.77	0.004397690
Line 9	0	#DIV/0!
Line 10	0	#DIV/0!
Line 11	0	#DIV/0!
Line 12	0	#DIV/0!
Line 13	0	#DIV/0!
Line 14	0	#DIV/0!
Line 15	0	#DIV/0!
Line 16	0	#DIV/0!
Line 17	0	#DIV/0!
Line 18	0	#DIV/0!
Line 19	0	#DIV/0!
Line 20	0	#DIV/0!
Line 21	0	#DIV/0!
Line 22	0	#DIV/0!
Line 23	0	#DIV/0!
Line 24	0	#DIV/0!
Line 25	0	#DIV/0!
Line 26	0	#DIV/0!
Line 27	0	#DIV/0!
Line 28	0	#DIV/0!

Shack Number: XP76
Name: Andrew Tipper
Signature: 

#2



Electronic Data Devices

P.O. Box 12128

Odessa, TX 79768

P - 432-366-8699

F - 432-366-106

sales@eddevices.com

1" X 1" THD METER

864.26

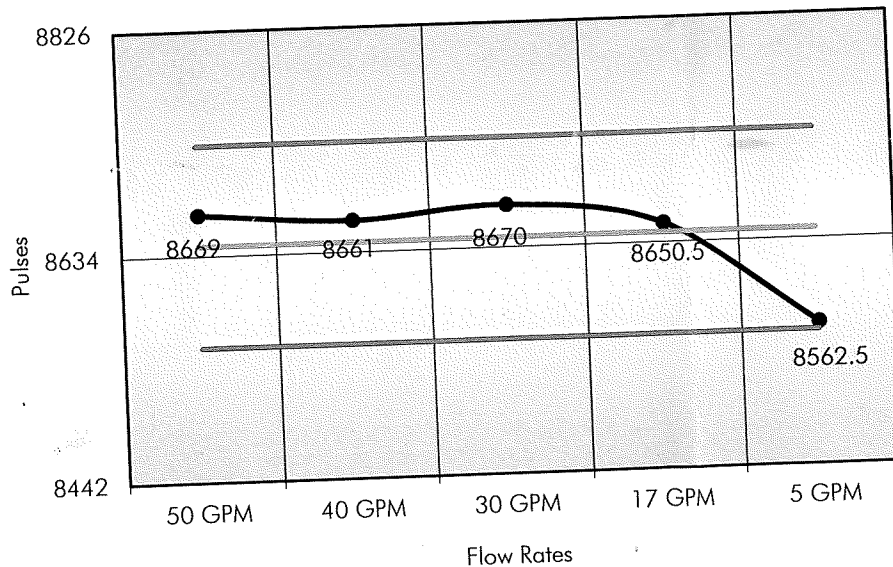
29-Oct-18

Calibration Data & Inspection Sheet

Calibration Factor : 864.26

Serial Number :	135296
Calibrated Item :	1" X 1" THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	29-Oct-18
Flow Range :	5 - 50 GPM

Flow Rate	Pulses
50 GPM	8668
50 GPM	8670
40 GPM	8660
40 GPM	8662
30 GPM	8662
30 GPM	8678
17 GPM	8651
17 GPM	8650
5 GPM	8557
5 GPM	8568



Total Pulses	86426
1%	8729.03
-1%	8556.17
Min. Value	8557
Max. Value	8678

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By : JWR

Notes : WELDED BY MIKE JOLLY
HEAT No. -A05426



Electronic Data Devices

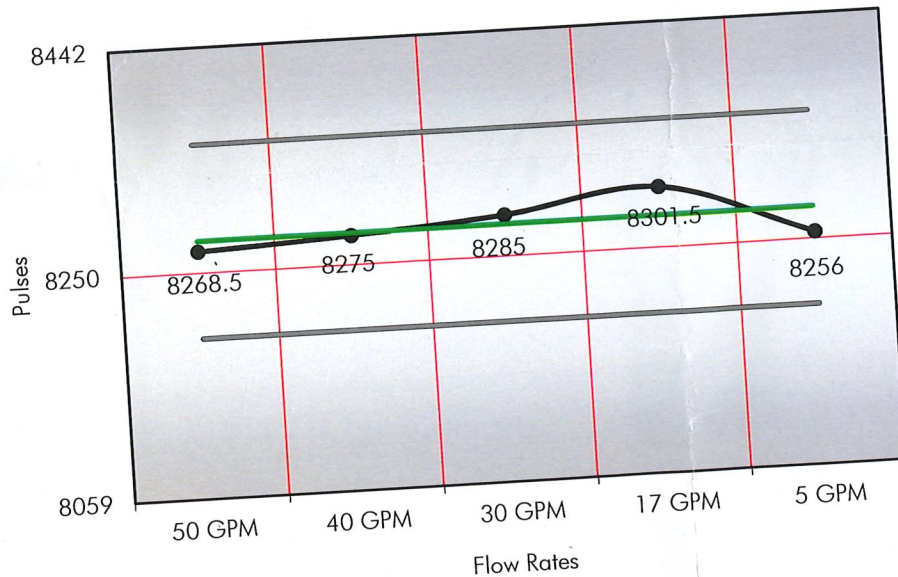
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1" X 1" THD METER
827.72
12-Oct-18

Calibration Data & Inspection Sheet

Calibration Factor : **827.72**

Serial Number :	135133
Calibrated Item :	1" X 1" THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	12-Oct-18
Flow Range :	5 - 50 GPM



Flow Rate	Pulses
50 GPM	8267
50 GPM	8270
40 GPM	8271
40 GPM	8279
30 GPM	8274
30 GPM	8296
17 GPM	8291
17 GPM	8312
5 GPM	8234
5 GPM	8278

Total Pulses	82772
1%	8359.97
-1%	8194.43
Min. Value	8234
Max. Value	8312

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By : JWR

Notes : WELDED BY MIKE JOLLY
HEAT No. -A05426

#3



Electronic Data Devices

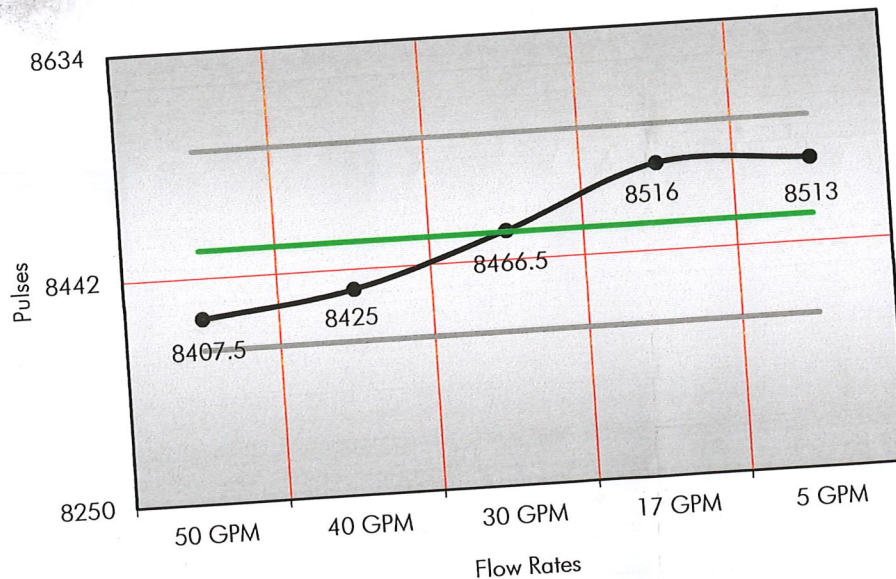
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1 X 1 THD METER
846.56
1-Aug-18

Calibration Data & Inspection Sheet

Calibration Factor : **846.56**

Serial Number :	132997
Calibrated Item :	1 X 1 THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	1-Aug-18
Flow Range :	5 - 50 GPM



Flow Rate	Pulses
50 GPM	8401
50 GPM	8414
40 GPM	8425
40 GPM	8425
30 GPM	8443
30 GPM	8490
17 GPM	8509
17 GPM	8523
5 GPM	8499
5 GPM	8527

Total Pulses	84656
1%	8550.26
-1%	8380.94
Min. Value	8401
Max. Value	8527

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By : JOHN RIDENOUR

Notes : WELDED BY MIKE JOLLY
HEAT No. -VX2796

#4



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1 X 1 THD METER

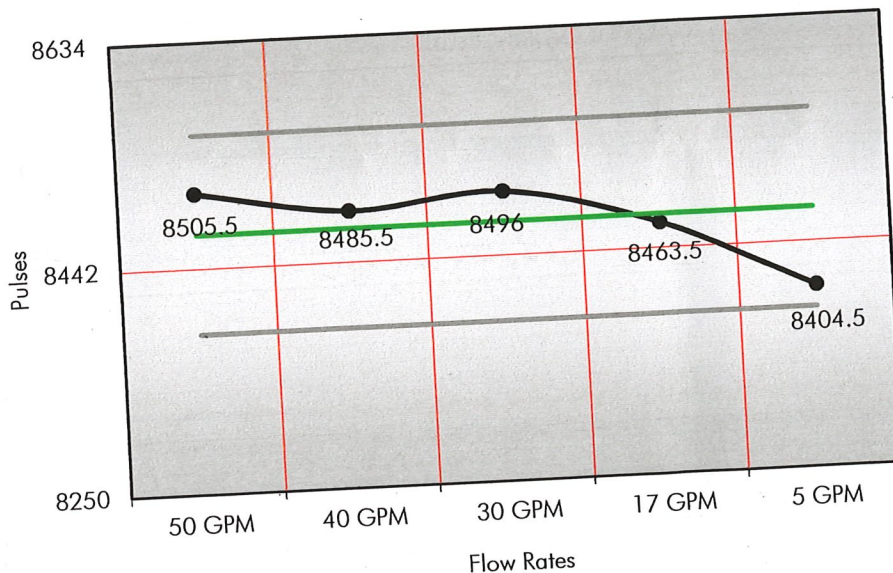
847.10

1-Aug-18

Calibration Data & Inspection Sheet

Calibration Factor : **847.10**

Serial Number :	132992
Calibrated Item :	1 X 1 THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	1-Aug-18
Flow Range :	5 - 50 GPM



Flow Rate	Pulses
50 GPM	8515
50 GPM	8496
40 GPM	8487
40 GPM	8484
30 GPM	8496
30 GPM	8496
17 GPM	8455
17 GPM	8472
5 GPM	8401
5 GPM	8408

Total Pulses	84710
1%	8555.71
-1%	8386.29
Min. Value	8401
Max. Value	8515

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By :	JOHN RIDENOUR
Notes :	WELDED BY MIKE JOLLY HEAT No. -VX2796



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#5

1" X 1" THD METER

868.76

29-Oct-18

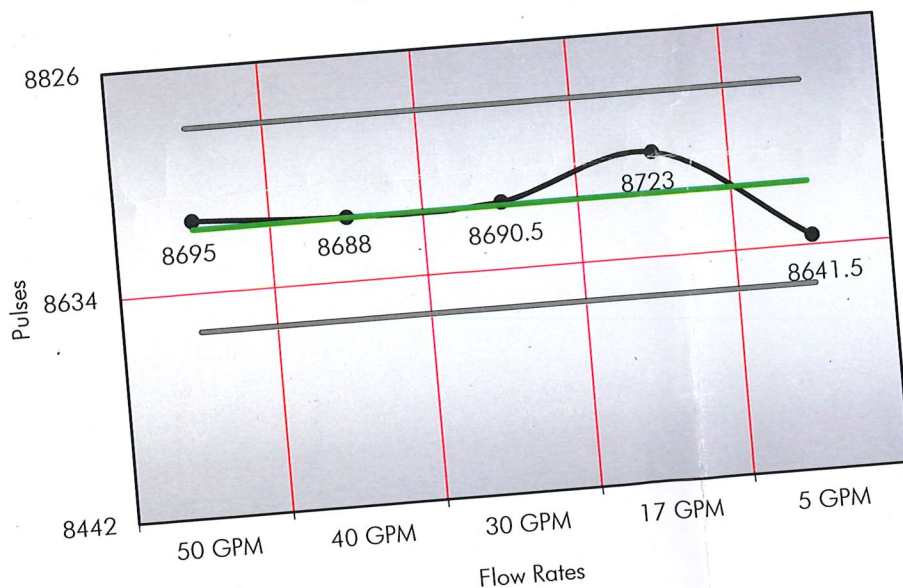
Calibration Data & Inspection Sheet

Calibration Factor :

868.76

Serial Number :	135292
Calibrated Item :	1" X 1" THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	29-Oct-18
Flow Range :	5 - 50 GPM

Flow Rate	Pulses
50 GPM	8694
50 GPM	8696
40 GPM	8687
40 GPM	8689
30 GPM	8689
30 GPM	8692
17 GPM	8721
17 GPM	8725
5 GPM	8637
5 GPM	8646



Total Pulses	86876
1%	8774.48
-1%	8600.72
Min. Value	8637
Max. Value	8725

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By : JWR

Notes : WELDED BY MIKE JOLLY
HEAT No. -A05426

#6



Electronic Data Devices

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1 X 1 THD METER

862.32

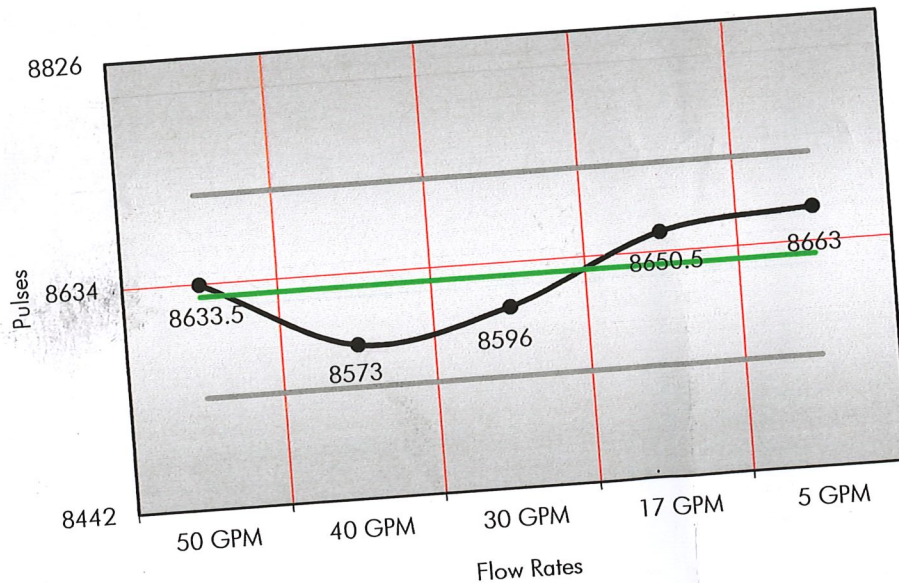
1-Aug-18

Calibration Data & Inspection Sheet

Calibration Factor : **862.32**

Serial Number :	132993
Calibrated Item :	1 X 1 THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	1-Aug-18
Flow Range :	5 - 50 GPM

Flow Rate	Pulses
50 GPM	8646
50 GPM	8621
40 GPM	8569
40 GPM	8577
30 GPM	8591
30 GPM	8601
17 GPM	8648
17 GPM	8653
5 GPM	8661
5 GPM	8665



Total Pulses	86232
1%	8709.43
-1%	8536.97
Min. Value	8569
Max. Value	8665

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By :	JOHN RIDENOUR
Notes :	WELDED BY MIKE JOLLY HEAT No. -VX2796

#7



Electronic Data Devices

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1" X 1" THD METER

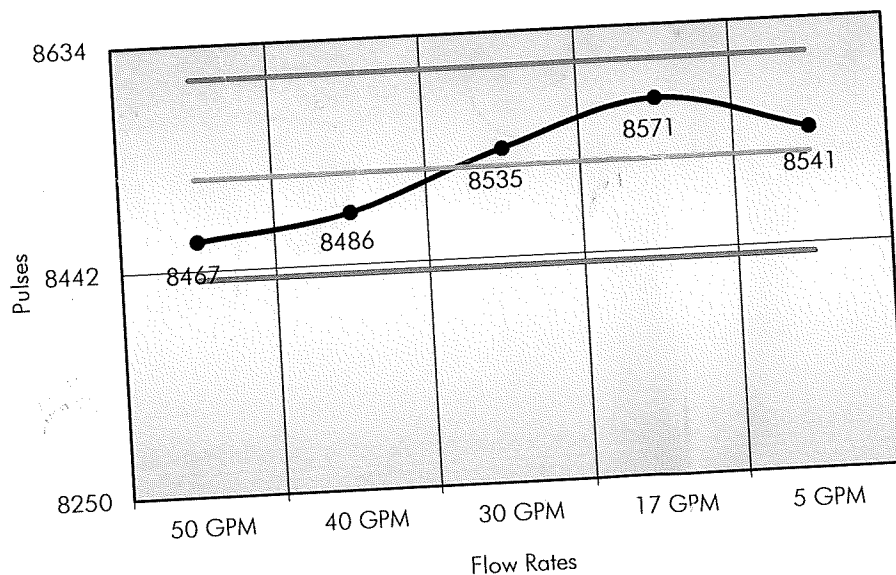
852.00

29-Oct-18

Calibration Data & Inspection Sheet

Calibration Factor : 852.00

Serial Number :	135295
Calibrated Item :	1" X 1" THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	29-Oct-18
Flow Range :	5 - 50 GPM



Flow Rate	Pulses
50 GPM	8463
50 GPM	8471
40 GPM	8471
40 GPM	8501
30 GPM	8529
30 GPM	8541
17 GPM	8577
17 GPM	8565
5 GPM	8545
5 GPM	8537

Total Pulses	85200
1%	8605.20
-1%	8434.80
Min. Value	8463
Max. Value	8577

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By :	JWR
Notes :	WELDED BY MIKE JOLLY HEAT No. -A05426

#8



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1 X 1 THD METER

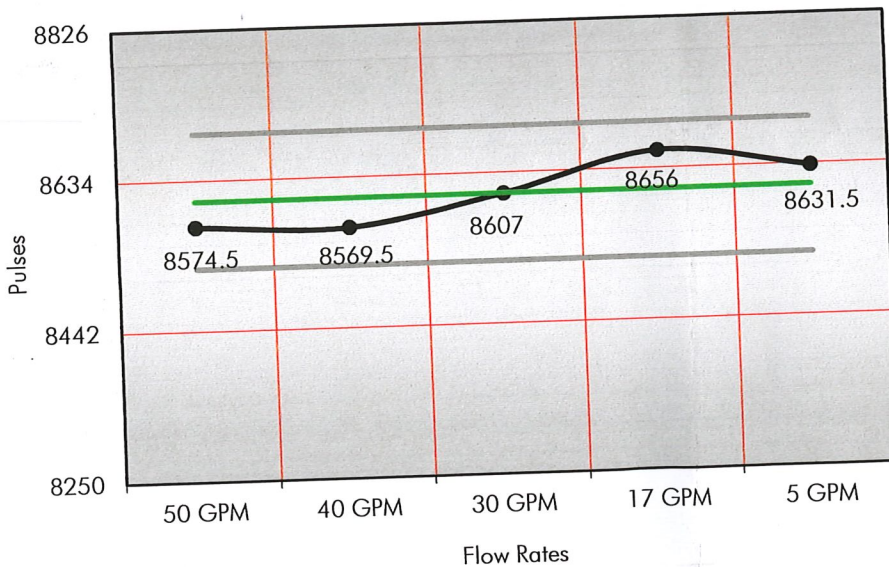
860.77

1-Aug-18

Calibration Data & Inspection Sheet

Calibration Factor : **860.77**

Serial Number :	132985
Calibrated Item :	1 X 1 THD METER
Part Number :	NPT0100101
Material Grade :	A479316
Date :	1-Aug-18
Flow Range :	5 - 50 GPM



Flow Rate	Pulses
50 GPM	8581
50 GPM	8568
40 GPM	8567
40 GPM	8572
30 GPM	8606
30 GPM	8608
17 GPM	8656
17 GPM	8656
5 GPM	8635
5 GPM	8628

Total Pulses	86077
1%	8693.78
-1%	8521.62
Min. Value	8567
Max. Value	8656

This calibration data and inspection sheet certifies this meter's and/or repair kit's dimensions have been verified to be within drawing dimensions and tolerances, the product is free from physical defects and all required markings are present and correct. Welded in accordance to WPS: ED-GT-SS100. Hub material is A 479 316.

Calibrated By :	JOHN RIDENOUR
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Notes :	WELDED BY MIKE JOLLY HEAT No. -VX2796
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VFD PARAMETERS

Group	Parameter	Setting	Group	Parameter	Setting
A	401	10.0	C	301	1
A	402	10.0	C	302	4
A	403	0	C	303	22
A	404	30.0	C	304	3
A	405	10.0	C	305	5.0
A	409	60.0	C	306	0
A	410	0.0	C	307	0
A	411	20.0			
A	412	30.0			
A	413	60.0	P	101	230
A	418	0	P	102	60
A	419	0.0	P	103	33.0
A	424	0.0	P	104	30.0
A	425	1.7	P	105	60.0
A	427	0	P	106	2
A	428	5	P	107	1
A	433	0	P	108	1
A	434	1	P	109	10.0
A	435	1	P	110	10.0
A	436	1	P	111	1
A	437	2.0	P	112	0
A	438	0.00			
A	439	0.00			
A	440	30.0	t	201	7
A	441	1	t	202	0
A	442	49.5	t	211	0.0
A	444	0	t	212	100.0
A	446	4.0	t	213	0.0
A	448	0.0	t	214	100.0
A	450	0	t	221	1
A	451	0	t	222	0.0
A	452	1.0			
A	453	7			
A	457	230			
A	458	0			
A	459	400			
A	461	24.6			

VFD PARAMETERS

Group	Parameter	Setting	Group	Parameter	Setting
A	401	10.0	C	301	1
A	402	10.0	C	302	4
A	403	0	C	303	22
A	404	30.0	C	304	3
A	405	10.0	C	305	5.0
A	409	60.0	C	306	0
A	410	0.0	C	307	0
A	411	20.0			
A	412	30.0			
A	413	60.0	P	101	230
A	418	0	P	102	60
A	419	0.0	P	103	33.0
A	424	0.0	P	104	30.0
A	425	1.7	P	105	60.0
A	427	0	P	106	2
A	428	5	P	107	1
A	433	0	P	108	1
A	434	1	P	109	10.0
A	435	1	P	110	10.0
A	436	1	P	111	1
A	437	2.0	P	112	0
A	438	0.00			
A	439	0.00			
A	440	30.0	t	201	7
A	441	1	t	202	0
A	442	49.5	t	211	0.0
A	444	0	t	212	100.0
A	446	4.0	t	213	0.0
A	448	0.0	t	214	100.0
A	450	0	t	221	1
A	451	0	t	222	0.0
A	452	1.0			
A	453	7			
A	457	230			
A	458	0			
A	459	400			
A	461	24.6			