



MOBILE KIT User Manual



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This manual dated April 2019 supersedes all previous manuals for this kit.

MOBILE KIT

Installation Manual

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Your Safety...Our Commitment

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Introduction

The Mobile Kits are vehicle applications for the Heath DP series. A DP instrument alone uses a survey probe and a bar hole probe. The survey probe is used while walking the “grid” and the bar hole probe for subsurface readings. The Mobile Kit follows the same concept as the survey probe, but on a larger scale. Essentially, the Mobile Kit pulls in air sample through cones, measures and discards excess sample before it is analyzed by the DP instrument.

One of the advantages of this product is the variety of vehicles it can be installed to (trucks, ATV, and even a 2 cone Segway)! The Mobile Kit is good for areas where walking is at a disadvantage and/or not safe. Highways, off road, streets, and cities are some of the common applications for the Mobile Kit.

The Mobile Kit is more than 50 years old; the design has evolved over the years and continues to adapt to current demand. The Mobile Kit operates in hot and cold weather. However, for best results avoid surveying when raining and/or snowing. Exception to this rule would be Frost Patrol (a.k.a. Fast Patrol), surveying high leakage area during the winter in cold-weather states.

Below is a description of main assemblies of the Mobile Kit.

Boom

Located in the front of the vehicle. The boom consists of cones, tubing, chains, channel and a manifold. The cones, also referred to as funnel, come in sets of 4 or 6. The chains give the flexibility to adjust height of channel to your vehicle. All of these components and the tubing mount to an aluminum channel that connects to the manifold. The manifold joins all the sample air gathered by each cone into a single line to feed the instrument.



Fig. 1 - 4 Cone Boom (100001-2)



Fig. 2- 6 Cone Boom (100001-0)

Pumps

Two pumps are mentioned throughout the manual, instrument pump and sample pump. The instrument pump does not require installation on your part and is not visible to you, but it’s necessary to mention it for maintenance and setting up purposes. The sample pump gathers air samples from the outside and helps transfer it to the instrument. The sample pump has two filters and water traps; keep them clean! Both pumps don’t have the same capabilities; hence flowrates require adjustments. Careful attention to the tubing (plumbing) of this kit will greatly affect the efficiency and life of your equipment.

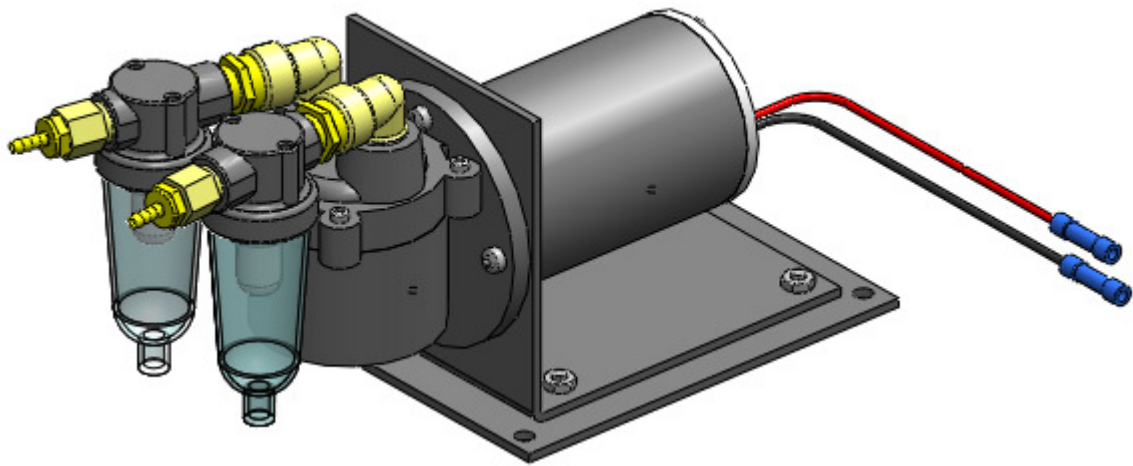


Fig. 3 - Sample Pump (102340-1)

Instrument and Saddle

The DP series instrument, leak detection instruments, can be DP4 and/or DP-IR IS. Any other older versions of DP Series are no longer supported. Any of our supported DP series instruments fit into the saddle. Please review appropriate instrument manual for operation and maintenance information. The instrument saddle mounts to the vehicle floor and adjusts for your convenience. Additional support may be added to the saddle depending on the vehicle. Other components attached to the saddle include a valve to adjust air flow, a flowmeter to measure flow and the plate supports.

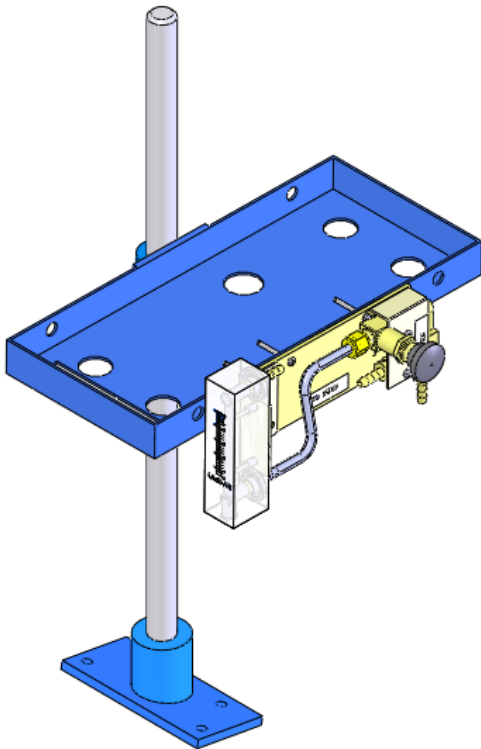


Fig. 4 - Instrument Saddle (102309-0)



Fig. 5 - DP-IR instrument

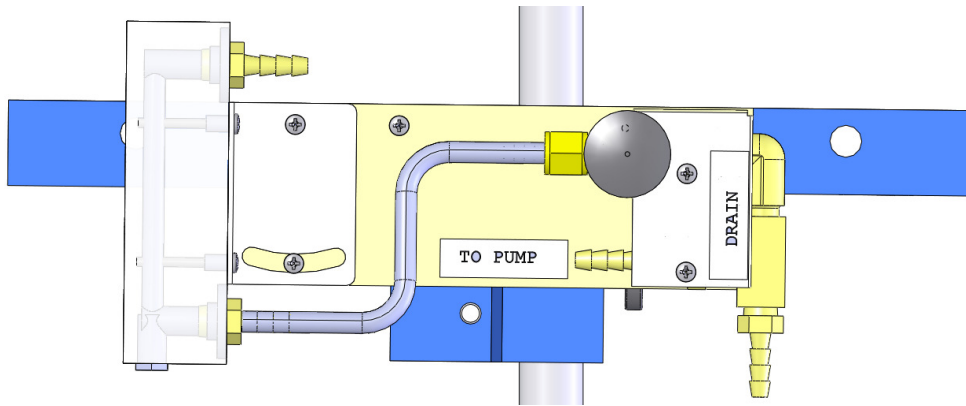


Fig. 6 - Zoom of side view, Flowmeter (left) and Bypass Valve (right).

Inverter

DC to AC inverter helps charge the instrument, if the instrument needs to run continuously for more than 8 hours. Inverter's output voltage is 120V AC and output power is 150 Watts. The connector is a Cigarette lighter/accessory plug. Review the inverter box in your kit for more specific information.

Tubing

The kit uses different tubingS. The Sample Line Tubing (8302958) transfers the sample from the manifold to the Bypass Valve and Drain. The Instrument Sample Line Tubing (0618343) goes from the Bypass Valve to the DP instrument. One should strive to make the tubing as short as possible by appropriate placements of pump and instrument saddle (this does not apply on the boom). This will reduce the travel time of sample to the instrument. Your company may also have regulations as to the dimension and/or material of tubing. We only supply clear PVC tubing.

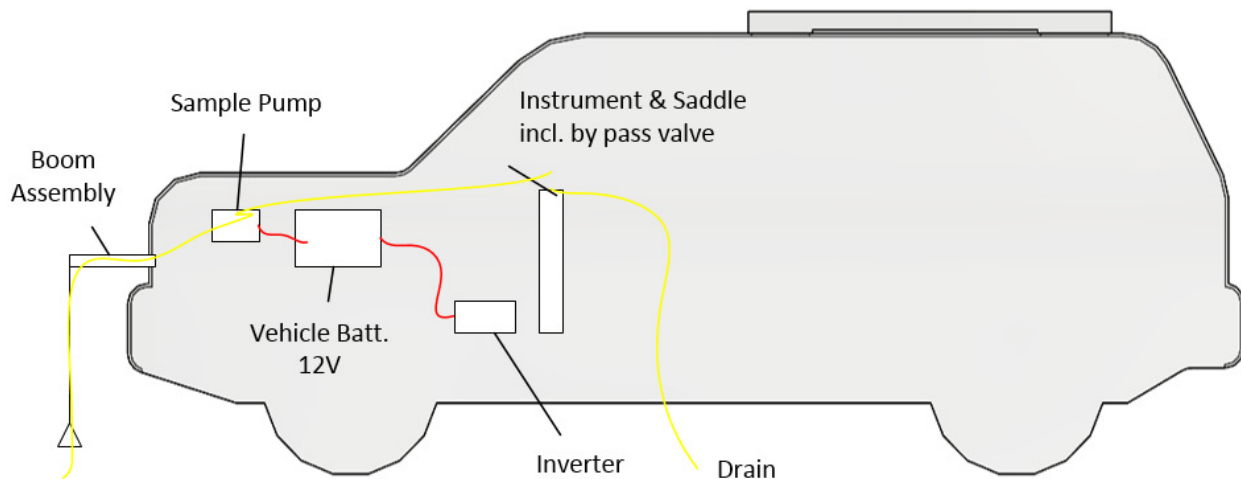


Fig. 7 – An overview example of the airflow (yellow lines) and electrical (red lines) scheme.

For proper installation and operation, review the DP series manual in conjunction to this manual.

CHAPTER ONE

DP Mobile Kit Installation

NOTE: *This manual and all reference drawings are applicable to both 4 and 6 cone installations.*

Installation Instructions:

This section explains first time installation. For everyday adjustment and modifications see the Operation and Maintenance section for more details. Due to vehicle variations, some of the installation processes refer to schematics only and not mechanical drawings. Follow the step-by-step instructions carefully, but be aware additional modifications may be required.

Keep in mind your survey application. Not all parts in the kit may be used. As caution, save any extra parts until the installation is complete.

Refer to all drawings before you start! And disconnect the battery as a safety precaution while working with the vehicle and connect back once finished.

Sample Pump Installation: (Ref. drawing 102340-0, (page 22))

1. Select a level area to mount the Sample Pump. Typical locations may be within the engine compartment, inside the cab or inside a tool compartment. Ensure that the location of pump allows easy access for the plastic filter bowls on the pump, but away from moving parts and hot surfaces. Pump filter bowls need to be as vertical as possible to allow water to be drained from the valves. Remember, tubing and wires will need to be routed to pump.
2. Minimize tube distance from the front cones to the instrument as much as possible. Long tube runs increase delay response time to the system.
3. Mark the location of the Sample Pump mounting holes on the vehicle surface and drill four .257 diameter mounting holes through the surface making sure the opposite side is clear of obstacles.
4. Mount the Sample Pump Assembly (102340-1), hardware will vary according to your vehicle.

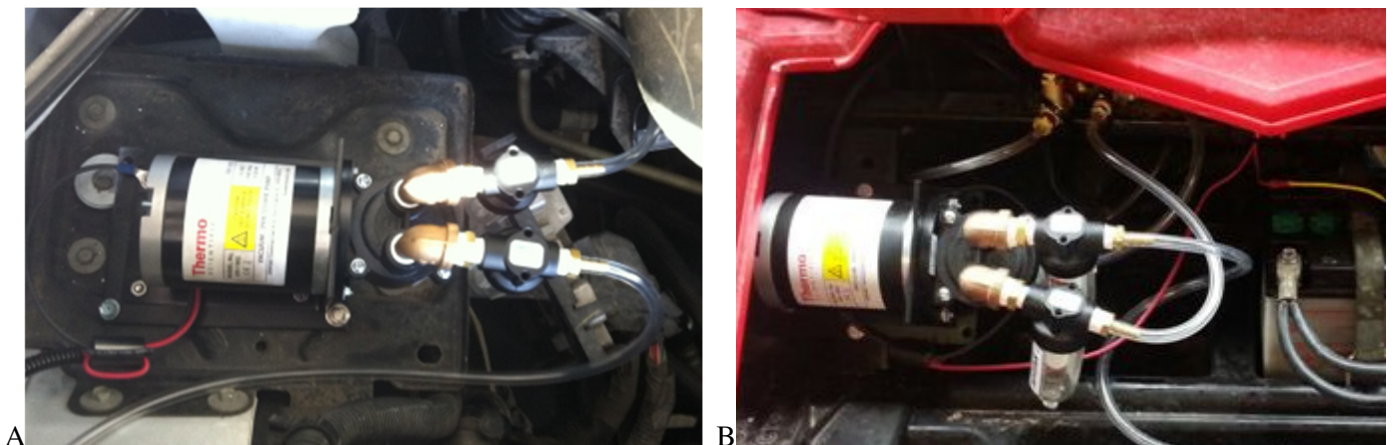


Fig. 8 – Examples of pump installations.

Saddle and Instrument Installation: (Ref. drawing 102309-0, (page 17) and Fig. 4)

1. Position Floor Mounting Plate (0414193) on the vehicle floor, so there is ample clearance for legs, shift levers etc.
2. Before drilling, make sure under the vehicle is clear of obstacles.
3. Drill four .257 diameter mounting holes through the floor for the Floor Mounting Plate.
4. Mount Floor Plate inside the vehicle and Support Plate outside the vehicle using ¼-20 x 1-1/2 screws (8304160) and ¼-20 nuts (8304159).
 - a. *Optional:* Depending on your vehicle, screw #12 x 2” will work best for installing the floor mount to the plate support.
5. Install Post 0413819 in Floor Mounting Plate and secure with two 5/16-18 set screws (0111683).
6. Slip Saddle Assembly (103566-0) on Post and secure with screws supplied in the Saddle.
7. Adjust Saddle to desired position and angle.
8. Place your DP instrument in the Saddle. If desired, secure instrument to Saddle with elastic straps.

Wiring: (Ref. Schematic drawing 102318, (page 20) and 102314-0, (page 18))

1. Decide best location for the power switch. The dashboard is usually best.
2. Determine the shortest distance for running wires from the vehicle’s battery, power switch location and Sample Pump Assembly. Each vehicle will determine the routing. Wires may go through firewall, tool boxes... Do not skip this step and plan ahead!
3. Check for existing bushings in the firewall. Pre-existent bushing help with routing and cut labor for both wires and tubing.

If none is found and wires need to go through the firewall, drill a ¾” diameter hole through the firewall and install bushing (8305905).
4. Drill a ½” hole in the vehicle dashboard (for the power switch) and mount the Switch from Cable Assembly 102314-0. Make sure the switch is OFF before connecting any wiring.
5. Details on ***Cable Assembly 102314-0***
 - a. The fuse holder has wires to the sides of it. Connect the ring terminal from one side to the positive terminal of the battery.
 - b. The other side of the fuse holder connects to a 14-gauge positive wire using a splice (0211936). This positive wire (connected to the fuse holder) should reach and connect to the center position of the switch (Fig. 10.A)
 - c. From the *side* of the switch, another positive 14-gauge wire is connected and extended to the positive wire of the pump (use splice 0211936 to connect) (Fig. 10.A).
 - d. Connect the negative wire from the Sample Pump to the negative terminal of the vehicle battery (use splice 0211936).

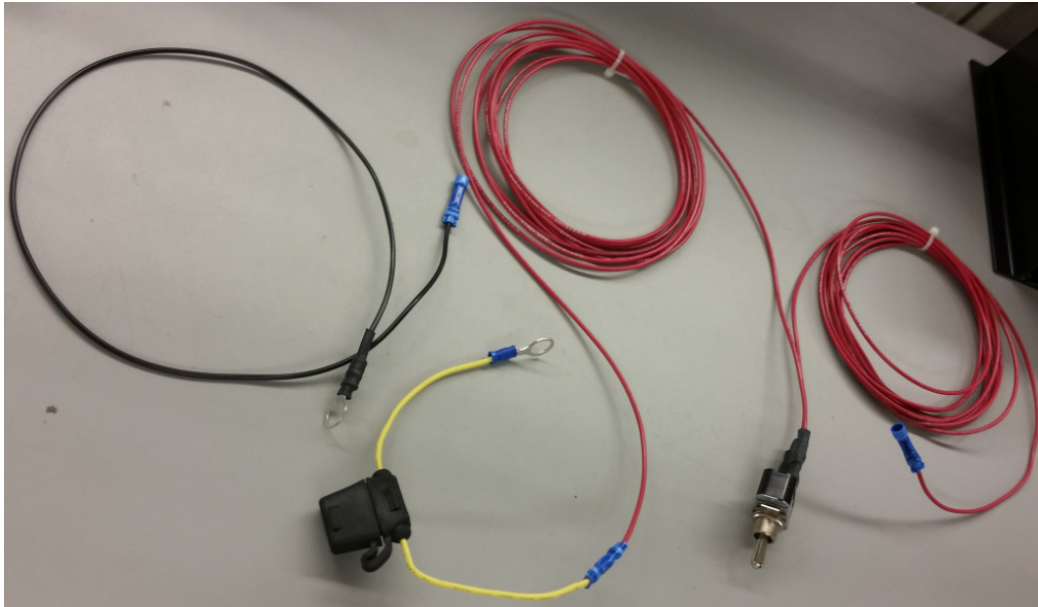


Fig. 9 – Assembly Cable (102314-0)

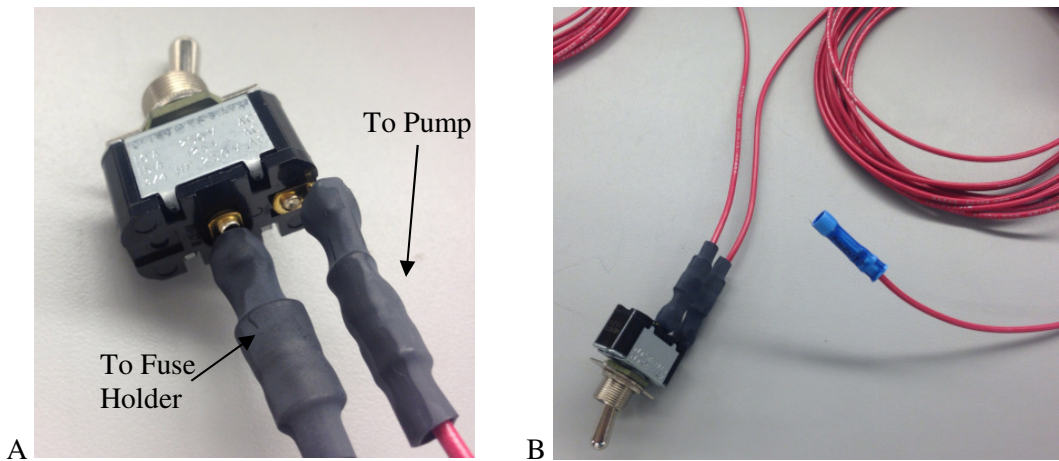


Fig. 10 (A, B) – Zoom pictures of switch and wire locations.

Boom Assembly Installation Suggestions

Due to vehicle variations and state regulations, there is no one way to install the boom assembly. We recommend getting it custom made by a professional. Below are suggestions for the installation.

Suggestions:

1. Should be centered to the vehicle, unless a special configuration.
2. Must follow state laws.
3. Distance from the boom to the bumper will depend on the company and state regulations. Some of our customers are required to have one foot gap, while others are required not to “stick out” of the bumper.
4. Tubing in the boom should not be replaced or changed when installing. For later on tubing replacement refer to the Maintenance Section (page 9) and “Tubing Configurations” table (page 12).
5. The holders (0413599) are optional. Purpose for the holders is to support the boom and give it freedom to move. It seems to give best results for some ATV applications. Most installations that use the holders are welded into the vehicle.
6. Make sure the cones do not hit the tires.

NOTE: *Boom’s tubing has fixed lengths, equal per cone. Don’t change length.*



A



B

Fig. 11(A, B) – Examples of Boom installations

Sample System and Tubing: (Ref. Flow Schematic drawing 102317-1 (4 cone page19) - OR- 102333 (6 cone page 21))

1. Verify the Boom Assembly 100001-2(4 Cones) -OR- (6 Cones) is secure.
2. Adjust the funnel height two inches, maximum, above the ground with the vehicle fully loaded.
3. Determine the shortest distance for the Sample Line Tubing (8302958). Remember, distance will affect response time. Routing starts at the boom's manifold to Sample Pump to saddle and lastly the instrument. Tubing at some point will go through firewalls and maybe tool boxes. These and other factors will change routing. Plan ahead.

Things to consider:

- a. Tubing should remain inside vehicle, unless stated otherwise.
 - b. Avoid hot surfaces, sharp edges, moving parts, and reconfiguring the vehicle, while routing.
 - c. Keep shortest distance.
 - d. Pump location: Is it inside the engine compartment, back of trailer bed, or other?
 - e. Firewall bushings – Newer vehicles have bushings and do not require drilling from your part.
 - f. Cut tubing after length is determined. Tubing will be cut to each connection mentioned below.
4. Route and connect Sample Line Tubing (8302958) from manifold outlet to the Sample Pump *Inlet*.
 5. Route and connect Sample Line Tubing (8302958) from the Sample Pump *Outlet* to the Bypass Valve *Inlet*.
 6. Route and connect Sample Line Tubing (8302958) from the Bypass Valve exhaust port (drain) to the outside of the vehicle (typically through the floor). Be sure the drain tubing cannot be melted by transmission, catalytic converter or exhaust system.
 7. Route and connect Instrument Sample Line Tubing (0618343) from the Bypass Valve Instrument Port to the Flowmeter (bottom fitting).
 8. Route and connect Instrument Sample Line Tubing (0618343) from the Flowmeter (top fitting) to the Instrument location. Attach the proper connector for either the DP4 or DP-IR.
 9. Completing installation:
 - a. Use as many Tie Wraps (8300319) as needed for all the wires and tubing. Tie gently to prevent tubing restriction (don't pinch the tubing). Trim excess.
 - b. Adhesive Clamps (0211942) are used for final positioning. Alcohol or another cleaning agent must be used to clean each area where the clamp is to be placed.

NOTE: *Keep wires and tubing away from moving parts and hot surfaces. Trim excess tubing and wires.*

CHAPTER TWO

DP Mobile Kit Operations

Mobile Kit Starting Instructions:

1. Turn DP instrument ON. For warm up and operating instructions see appropriate instrument manual.
2. Make sure kit is secure. Reference Maintenance: Daily Section.
All tubing should be connected except for the DP instrument. Reference air flow drawing (102317-1 (page 19) for 4 cone - OR – 102333 (page 20) for 6 cone).
3. Make sure all cones are at the correct height – no more than 2 inches above the ground.
4. Start up the mobile system by turning the Sample Pump ON. The switch is usually located at the dashboard.
5. Connect the Instrument Sample tube from the Flowmeter to the instrument.
6. Check the flow coming into the instrument. The flowmeter should read approximately 1.2 LPM for the DP-IR and close to 2 LPM for DP4.
Reading Flowmeter:
Read the middle part of the Float (ball inside flowmeter) indicates the flow.
7. Adjust By-pass (bleed-off valve) to change flow reading, *if needed.*
8. Perform an air tightness test. The test is one way to check for leaks in the system and see if the DP-IR (if in use) produces a flow error. Turn to close the knob on the By-pass Valve to cause a decrease in the Instrument Pump capacity.
9. Use safety signs, lights, and any other equipment required by law in your area for vehicle surveys.
10. The system is now ready for survey.
11. Survey procedures will vary based on company's standard. Below are suggestions for surveying. However, it is crucial for you to understand and comply with your company's standards.
 - a. Determine the survey mode.
 - b. Familiarize yourself with the mobile unit.
 - c. Recommended speed: between 3-5 mph. For distribution lines, 2-3 mph (usually good) and 5 mph for some high-pressure lines with good venting conditions. Fast/Frost patrol about 15 mph (during winter in cold-weather states).
 - d. Always survey with traffic and not against it.

Mobile Kit Shutting Down Instructions:

1. Disconnect the Instrument Sample tube from the DP instrument.
2. Turn OFF the Sample Pump switch.
3. Turn OFF DP instrument - *always refer to DP instrument manual for more information*
4. Suggestion: raise sample cones away from the ground to prevent excessive wear and tear.
5. Recharge DP instrument.

CHAPTER THREE

DP Mobile Kit Maintenance

Daily (before surveying):

1. Check the sample flow tube into the instrument, no wear or tear, dirt, or broken connections, etc...
2. Check the Sample Pump Assembly filters for water/dirt. Reference Fig. 12.A and 12.B.
 - a. Remove and empty plastic bowls (water traps) if necessary. Depending on the survey area, you may need to empty the plastic bowls more than once a day.
 - b. Filters inside the plastic bowl (element filter) are replaced when worn out. Filters can be cleaned with warm water but needs to dry before reuse.
3. Check position and operation of Boom. Make sure it follows state regulations.
 - a. Centered to the vehicle front.
 - b. Funnel height: 2 inches above ground.
 - c. Tubing cleared and no visible damage.
 - i. Tubing for the boom is included in the kit. Each tube for the cones and manifold has a defined length which *cannot be changed*; doing so will alter air sample. When replacing tubing keep the same length mentioned on the table below (Ref. drawing 10000-1 and 100001-2).

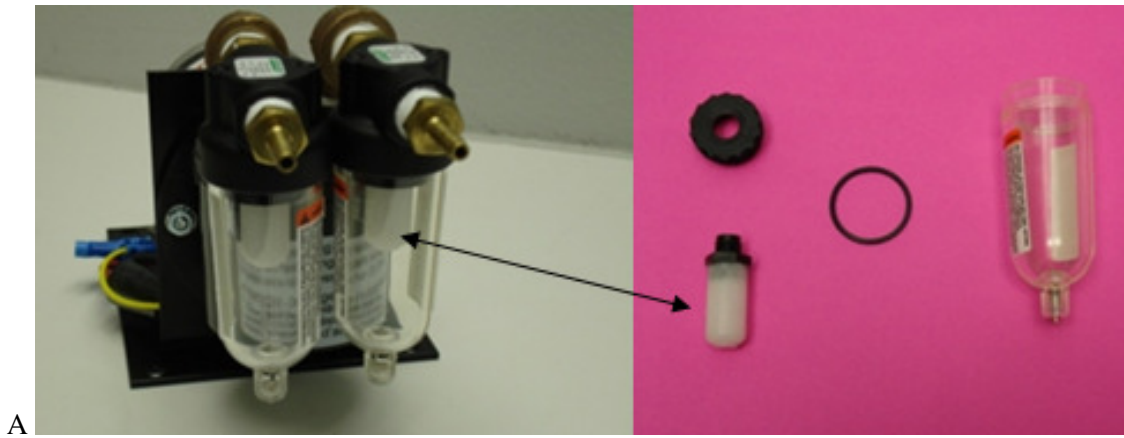
	Funnel to Channel	Channel to Manifold
4 and 6 cones	15 inches	30 inches

NOTE: *Do not shorten the boom's tubing. The length should be equal per cone.*

- ii. For ordering tubing replacement refer to "Tubing Configurations" table on page 12.
4. Check DP filters – reference instrument manual for further details.
5. Bump test the system. The Bump test examines delay response on each cone by using a known sample gas. Inject 1000 ppm methane or higher* into each cone, one at a time. Response time should be less than 5 seconds. Keep in mind the number of cones and of dilution; sampling through one cone at a time will never give 100% reading of the injected gas, but a fraction.

Once a week:

1. Use a vacuum gauge to measure the Sample Pump vacuum pressure. Unplug the single line from the manifold and connect appropriately the vacuum gauge. The vacuum pressure is usually 23in Hg and it should not be less than 20in Hg. Readings below 17in Hg should be inspected for leaks. If no leaks are detected then pump needs replacing.
2. Blow out sample lines and cones with compressed air (not included in Kit). Disconnect the Sample Line tubing from the Sample Pump inlet and blow out through the cones. Repeat with the sample line tubing between Sample Pump outlet and by-pass valve (all disconnected). Make sure the DP instrument is not connected when following this process.



A

Fig. 12.A Filter assembled and disassembled



B

Fig. 12.B Clean and dirty filters

Keep vehicle inspection and care up to date. For detailed instrument maintenance see the DP4 or DP-IR instruction manual.

***NOTE:** *Butane lighter is no longer a true methane test. No longer recommended.*

CAUTION: Do not use high pressure to the instrument, severe damage may occur.

Filters: Dirty filters restrict air flow, possible motor overloading and early pump failure. Check the filters periodically and clean them when necessary.

Pump Reference

Content below is specifically for pump and not Mobile Kit.

Voltage	12 VDC
Current	4.65 A
Air Capacity	1380 cu in/min (17L)
Max. Pressure Intermittent Duty	18 psig
Max. Pressure Continuous Duty	16 psig
Max. Vacuum	20 inches Hg
Operating Temperature range	0° to 40°C (32° to 104°F)
Humidity range	10% to 90% non-condensing
Altitude	Less than 2000m
Pollution Degree (Indoor usage – lab, office)	Pollution Degree 2
Enclosure rating	IP 20 per IEC 60529
Noise Level	<70 dBA @ 1 meter
Weight	2.7 kg (6 lbs)
Compliance	115V: UL1450, CSA C22.2, No. 68 230V (For CE Mark): EN 1012-2 (EU Machinery Directive) EN 61326 (EU EMC Directive)

Weight Specifications

PART NO.	DESCRIPTION	WEIGHT (LBS)
100001-0	ASSY, BOOM 6	9.3
100001-2	ASSY, BOOM 4	9.2
102340-1	ASSY, PUMP	6.8
103566-0	ASSY, SADDLE	3.8
0413819	HANDLE SHAFT	2.5
102322-0	PLATE, SUPPORT	0.8
102458-0	INVERTER, 12 V - 120 V	1.125

System Parts List

PART NO.	DESCRIPTION	QTY.
<i>SWEeper</i>		
0214411	ASSY, FUNNEL	4 or 6
<i>CABLE</i>		
102314-0	CABLE, PUMP POWER	1
103137-0	FUSE, 3AG SLO BLO, 15 A.	1
<i>PUMP</i>		
102340-1	PUMP, SECONDARY	1
102345-0	ELEMENT, FILTER	4
<i>INSTRUMENT SADDLE</i>		
102309-0	ASSY, SADDLE	1
0210119	FLOWMETER, .6-5 LPM	1
103517-0	ASSY, BYPASS VALVE	1
0413819	POST, SADDLE	1
0414193	PLATE, FLOOR MOUNTING	1
111683	SCREW, 5/16-18 X ½ SET	2
8306610	BOLT, ¼-20 X 1-1/2 HEX	4
8304159	NUT, ¼-20 KEP	8
102322-0	PLATE, SUPPORT	1
8304160	SCREW, ¼-20 X 1-1/2	4
<i>TUBING</i>		
0618343	HOSE, 1/8 ID x ¼ OD. Instrument Sample Line	2.5 ft.
8302958	HOSE, 3/16 ID X 3/32 INWALL. Sample Line	20 ft.
MISCELLANEOUS		
8300319	TIE, CABLE	16
102458-0	INVERTER, 12 V - 120 V	1
DOCUMENTATION		
102315-0	MANUAL, DP SERIES MOBILE	1

Tubing Configurations

Where Installed	Part Number - QTY (ft)	
	6 Cone	4 Cone
Boom	8301846 - 22.5	8301846 - 15
Saddle	0618343 - 2.5	061843 - 2.5
Routing	8302958 - 20	8302958 -20

CHAPTER FOUR

DP Mobile Kit Service Information

Warranties and Warranty Repair:

All instruments and products manufactured by Heath Consultants Incorporated are warranted to be free from defects in material and workmanship for one year from date of shipment.

The warranty on authorized repairs in the Houston factory service center (FSC) is 90 days materials and 30 days labor. This repair warranty does not extend any other applicable warranties.

Our warranty covers only failures due to defects in materials or workmanship which occur during normal use. It does not cover failure due to damage which occurs in shipment, unless due to improper packaging. It does not cover failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, or service other than at a Heath Consultants warranty repair location.

Heath Consultants responsibility is expressly limited to repair or replacement of any defective part, provided the product is returned to an authorized warranty repair location, shipped prepaid, and adequately insured. Return shipping and insurance will be at no charge to the purchaser.

We do not assume liability for indirect or consequential damage or loss of any nature in connection with the use of any Heath Consultants product.

There are no other warranties expressed, implied, or written except as listed above.

Return Procedure:

The following suggestions will expedite the repair of your equipment:

1. Contact Heath Factory Service at 1-800-432-8487 to request a repair form. The form is available online at www.heathus.com
2. Package carefully, using original shipping carton if available, and return all components including the repair form.

The repair form request information such as complete shipping and billing addresses, product name, model number or serial numbers. Also include a brief description of the problem you are experiencing and the person and phone number to be contacted for additional information and approvals.

CUSTOMER ASSISTANCE, MANUFACTURING AND SERVICE LOCATIONS

If for any reason assistance is required, technical or otherwise, please contact Heath Customer Service at 1-800-HEATH-US (1-800-432-8487).

CORPORATE HEADQUARTERS

Heath Consultants Incorporated

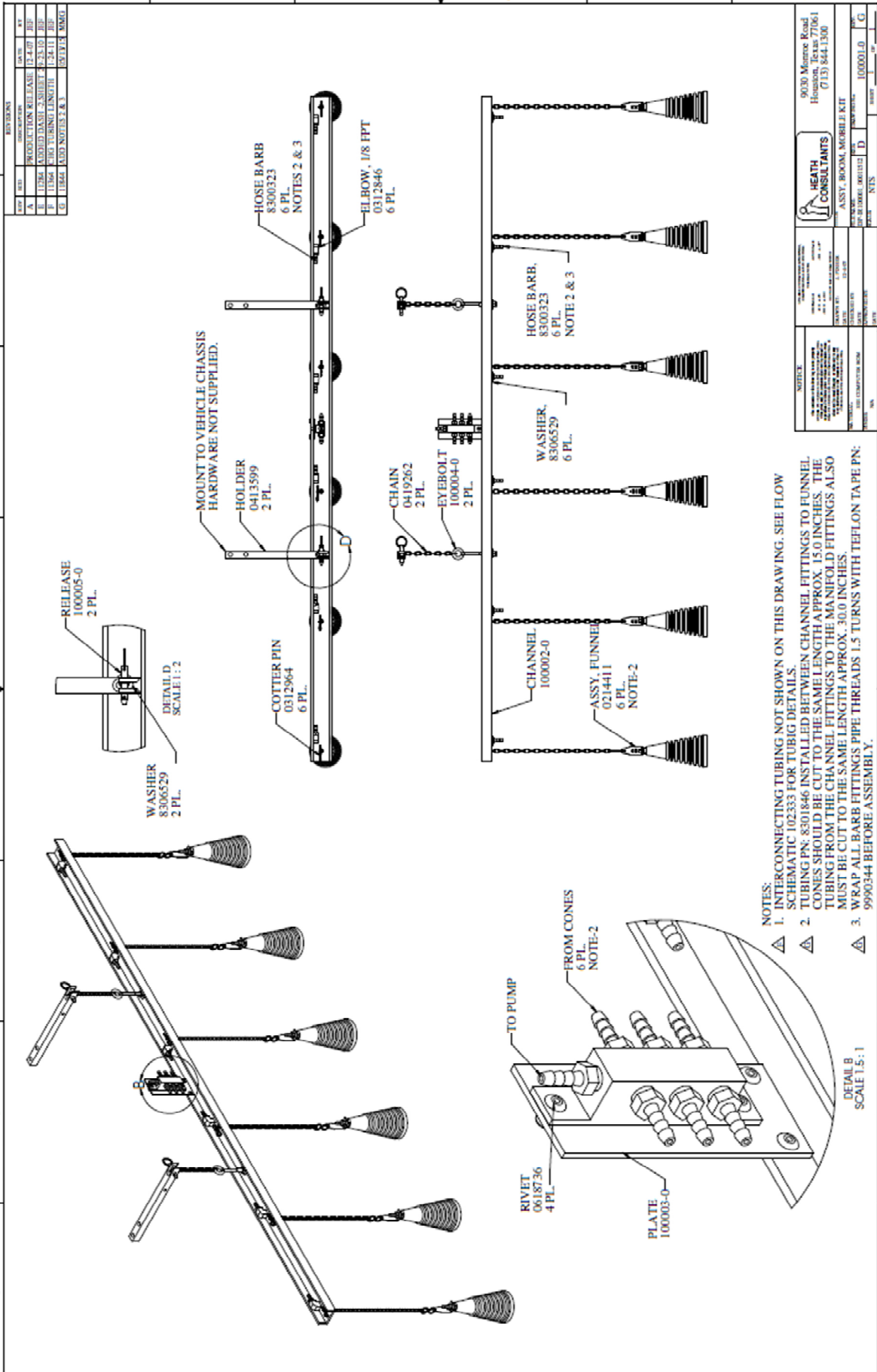
9030 Monroe Road
Houston, Texas 77061
Phone: (713) 844-1300
Fax: (713) 844-1309

MANUFACTURING AND WARRANTY SERVICE CENTERS

Heath Consultants Factory Service Center

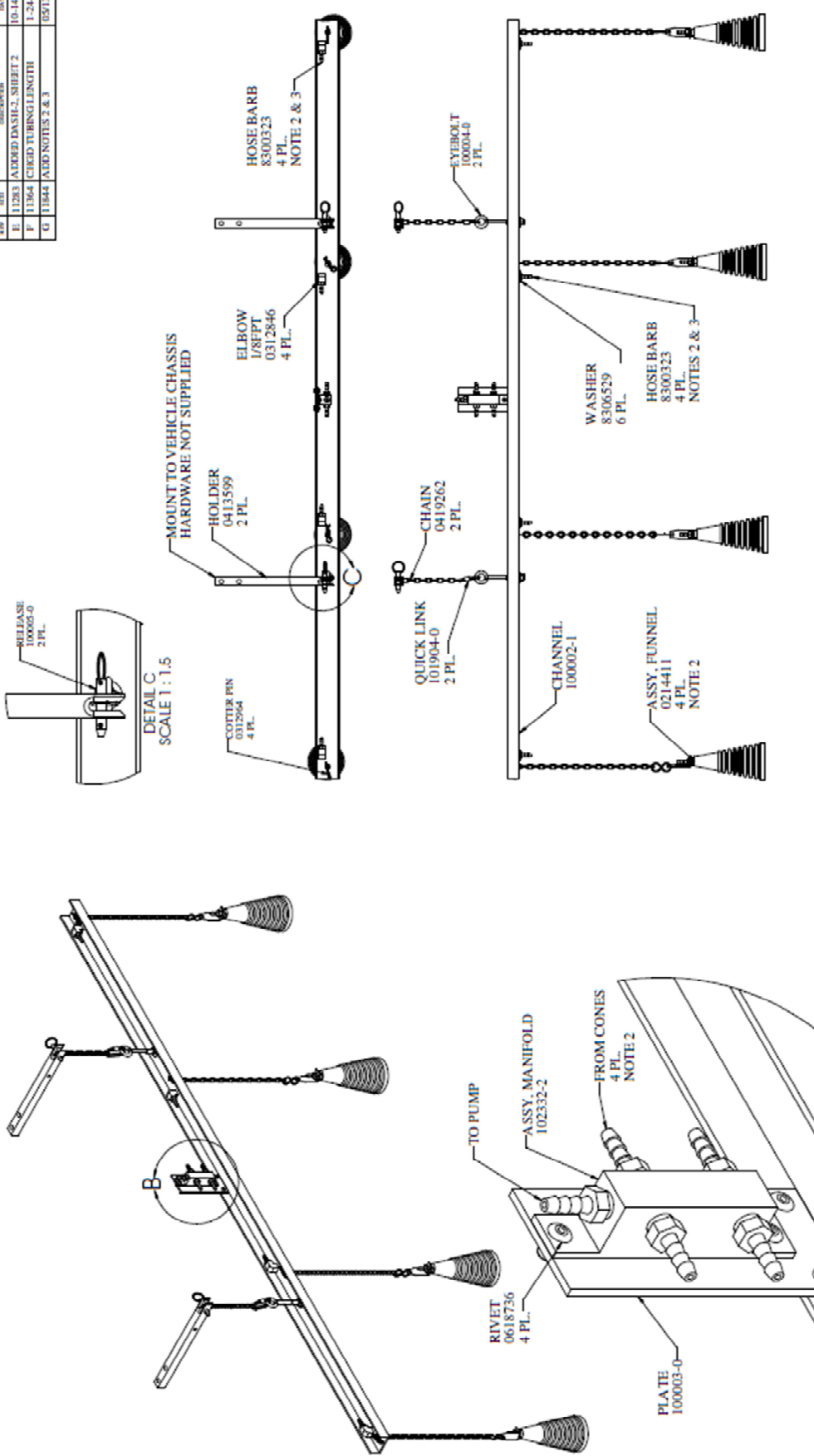
9030 Monroe Road
Houston, Texas 77061
Phone: (713) 844-1350
Fax: (713) 844-1398

Assembly, Boom, 6 Cone Drawing 100001-0



Assembly, Boom, 4 Cone Drawing 100001-2

REV	DATE	BY	CHKD	APP'D
E	11283	ADDED DASH 2, SHEET 2		10-14-10
F	11364	CHANGED TUBING LENGTH		1-24-11
G	11844	ADDED NOTES 2 & 3		05/13/12



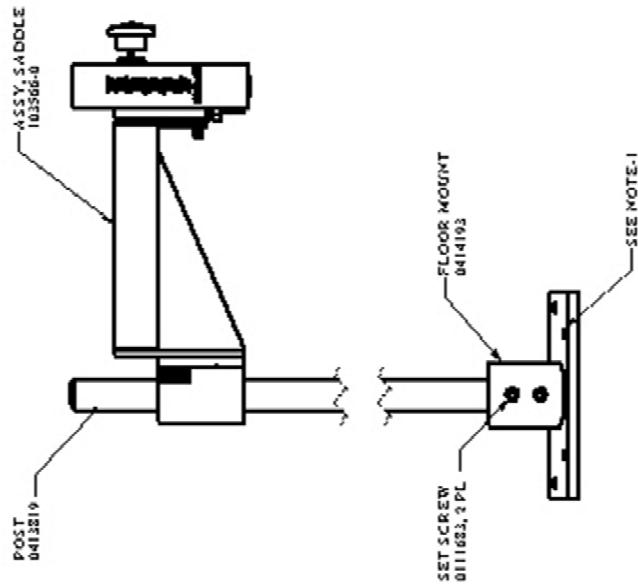
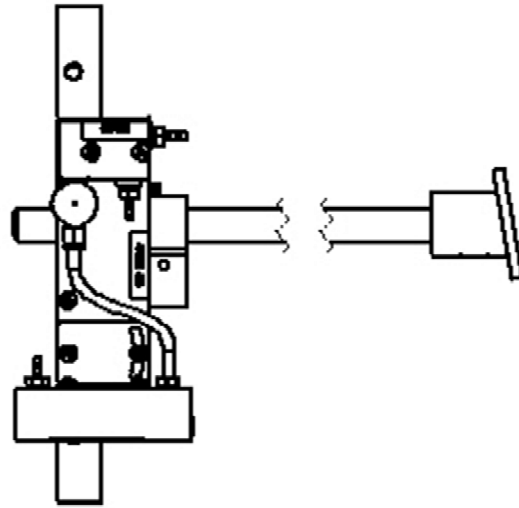
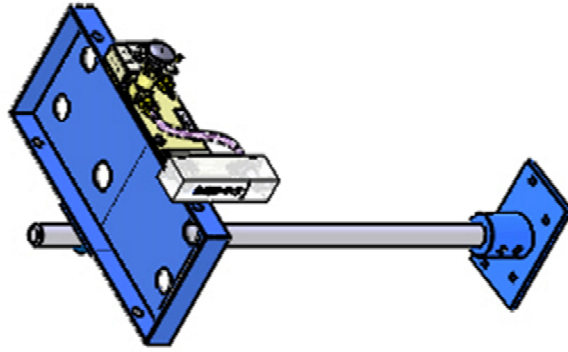
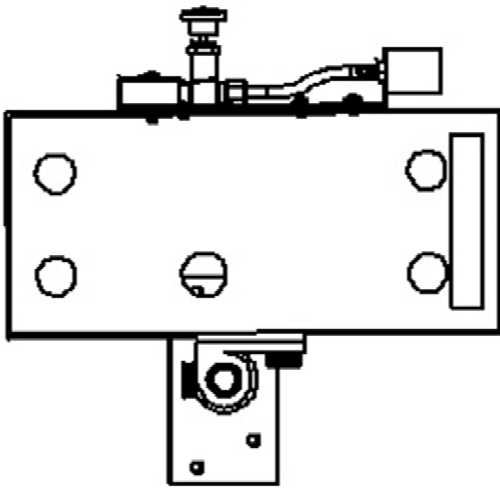
- NOTES:
1. INTERCONNECTING TUBING NOT SHOWN ON THIS DRAWING. SEE FLOW SCHEMATIC 102317-1 FOR TUBING DETAILS.
 2. TUBING PN: 8301846 INSTALLED BETWEEN CHANNEL FITTINGS TO FUNNEL CONES SHOULD BE CUT TO THE SAME LENGTH APPROX. 15.0 INCHES. THE TUBING FROM THE CHANNEL FITTINGS TO THE MANIFOLD FITTINGS ALSO MUST BE CUT TO THE SAME LENGTH APPROX. 30.0 INCHES.
 3. WRAP ALL BARB FITTINGS PIPE THREADS 1.5 TURNS WITH TEFLON TAPE PN: 99900344 BEFORE ASSEMBLY.

NOTICE	HEATH CONSULTANTS	ASSY, BOOM, 4 CONE, MANIFOLD KIT
<p>HEATH CONSULTANTS</p> <p>9030 Monroe Road</p> <p>Houston, Texas 77061</p> <p>(713) 844-1300</p>	<p>DATE: 10/14/10</p> <p>BY: [Signature]</p> <p>APP'D: [Signature]</p>	<p>PROJECT: 100001-2</p> <p>SHEET: 2 OF 2</p>

Assembly, Instrument Saddle Drawing 102309-0

REVISIONS		
REV.	DESCRIPTION	DATE
C	11285 MADE ASSY	9-28-10
D	11320 CHGD HARDWARE	3-25-11
E	11332 CHANGE SADDLE	11-22-11
F	11345 REMOVE 100076-0 FROM BOM	4-18-12
G	11844 PRODUCT UPDATE	3-13-15
		BY: JEF

NOTES:
 1 MOUNTING HARDWARE 14-20X1-1/2" SCREWS, 8304160 AND 14-20 LOCKNUTS, 8304159 NOT SHOWN. DUE TO VEHICLE VARIATION, M12-30X2" SELF TAPPING SCREWS, 104408, MAY BE SUBSTITUTED

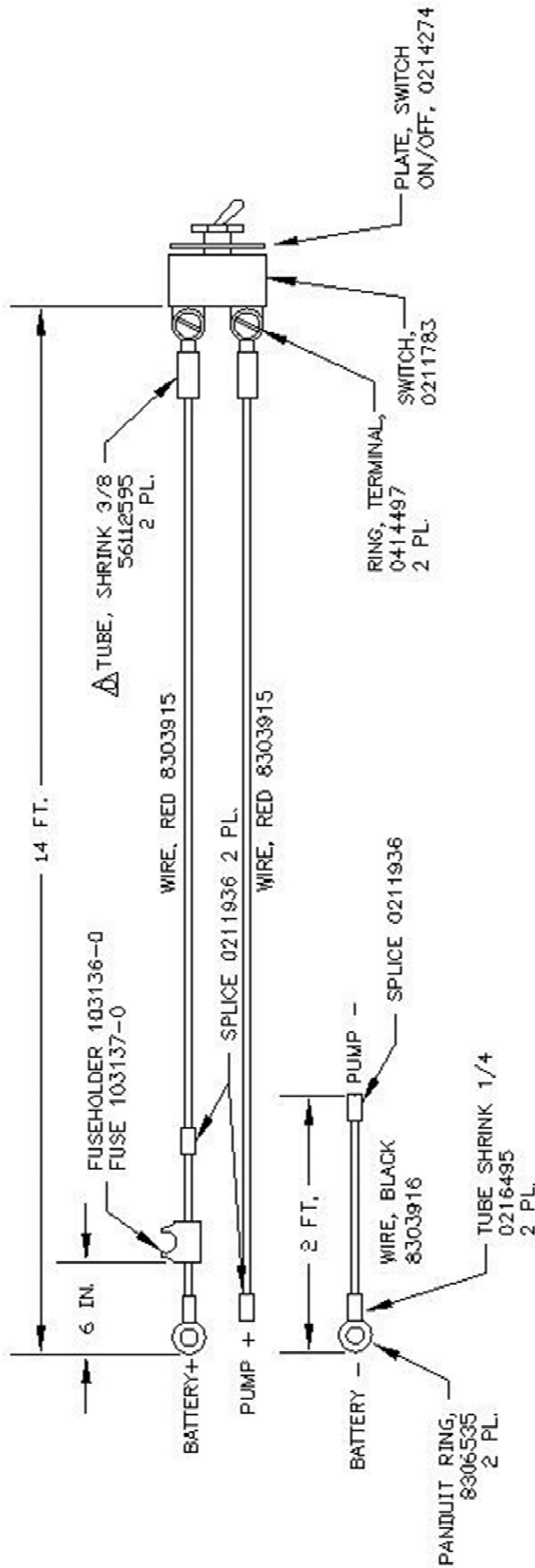


		9030 Monroe Road Houston, Texas 77061 (713) 844-1300	
TITLE: ASSY. INSTRUMENT SADDLE, DP SERIES		DRAWING NO.: 102309-0	
PART NUMBER: 102309-0001-00		SCALE: NTS	
DATE: 07/28/10 BY:		DATE: 07/28/10 BY:	
CHECKED BY:		DATE:	
DRAWN BY:		DATE:	
REVISIONS:		DATE:	
INSTRUMENTS:		DATE:	
GENERAL COMMENTS:		DATE:	
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Cable, Pump Power, Mob. Kit Drawing 102314-0

PART NUMBER		DESCRIPTION	
102314-0		CABLE, PUMP POWER	

REVISIONS			
REV	DESCRIPTION	DATE	BY
C	ECO 11050	6-4-09	JEF
D	ECO 11515	12-7-11	JEF
E	ECO 11844, ADD COMP. DESC.	05-13-15	MMG



NOTES:
 1- SEE SCHEMATIC 102318 FOR INSTALLATION DIAGRAM.
 2- FUSE AND FUSE HOLDER ARE ASSEMBLED WHEN INSTALLING TO VEHICLE.

HEATH CONSULTANTS

9030 Monroe Road
Houston, Texas 77061
(713) 844-1300

CABLE, PUMP POWER, MOB. KIT

FILE NAME: DP-IR102314
 SIZE: A
 DNG. NO.: 102314
 SCALE: NTS
 SHEET 1 OF 1

UNLESS OTHERWISE NOTED: DIMENSIONS ARE IN INCHES TOLERANCES

DECIMALS	ANGULAR
.XX ± .05	.XX ± .05
.XXX ± .010	

DO NOT SCALE DRAWING

DRAWN BY: J. FISHER
 DATE: 11-12-07

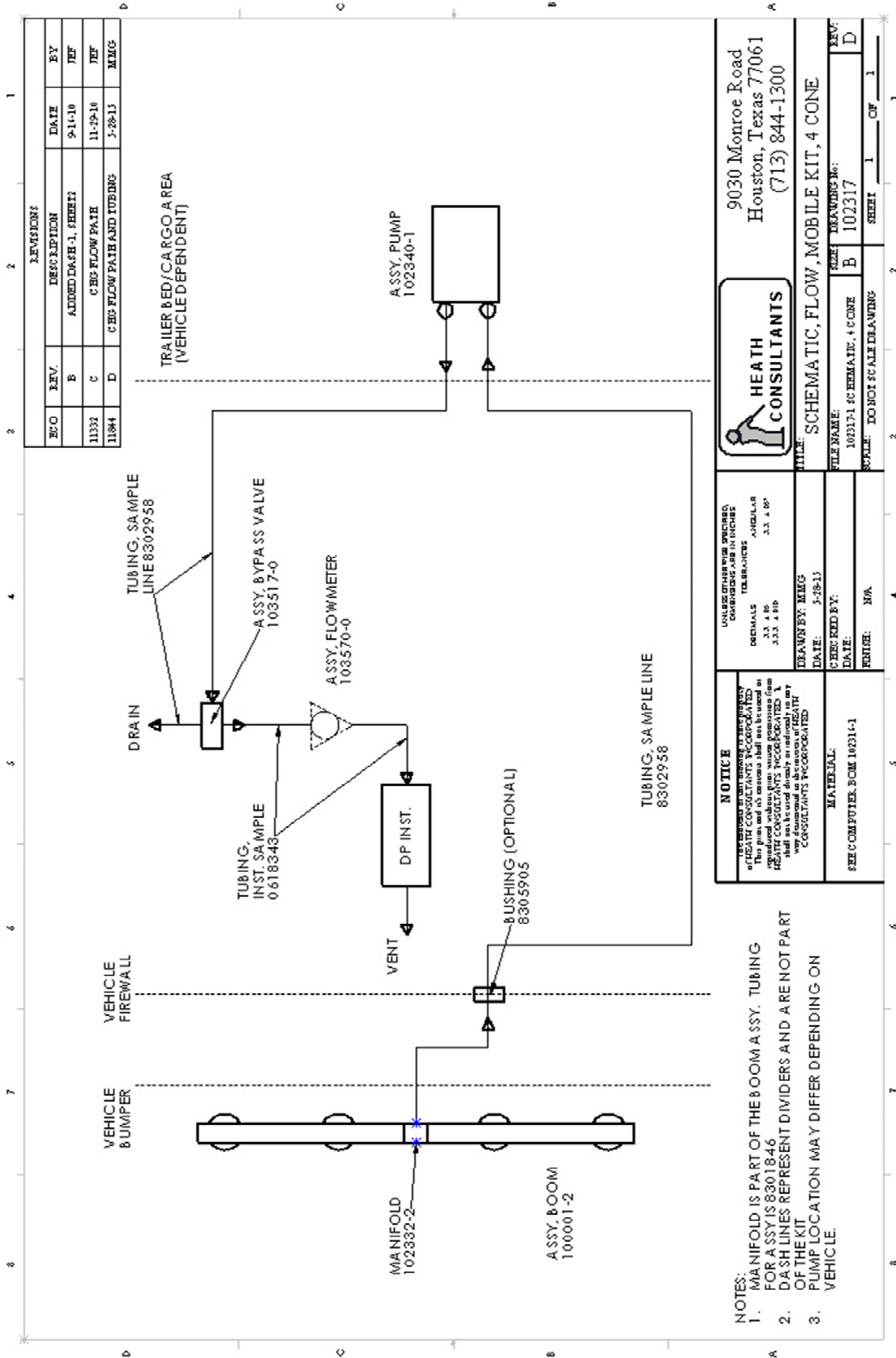
CHECKED BY:
 DATE:
 APPROVED BY:
 DATE:

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MATERIAL:
SEE COMPUTER BOM

FINISH:
N/A

Schematic Flow, 4 Cone Drawing 102317-1

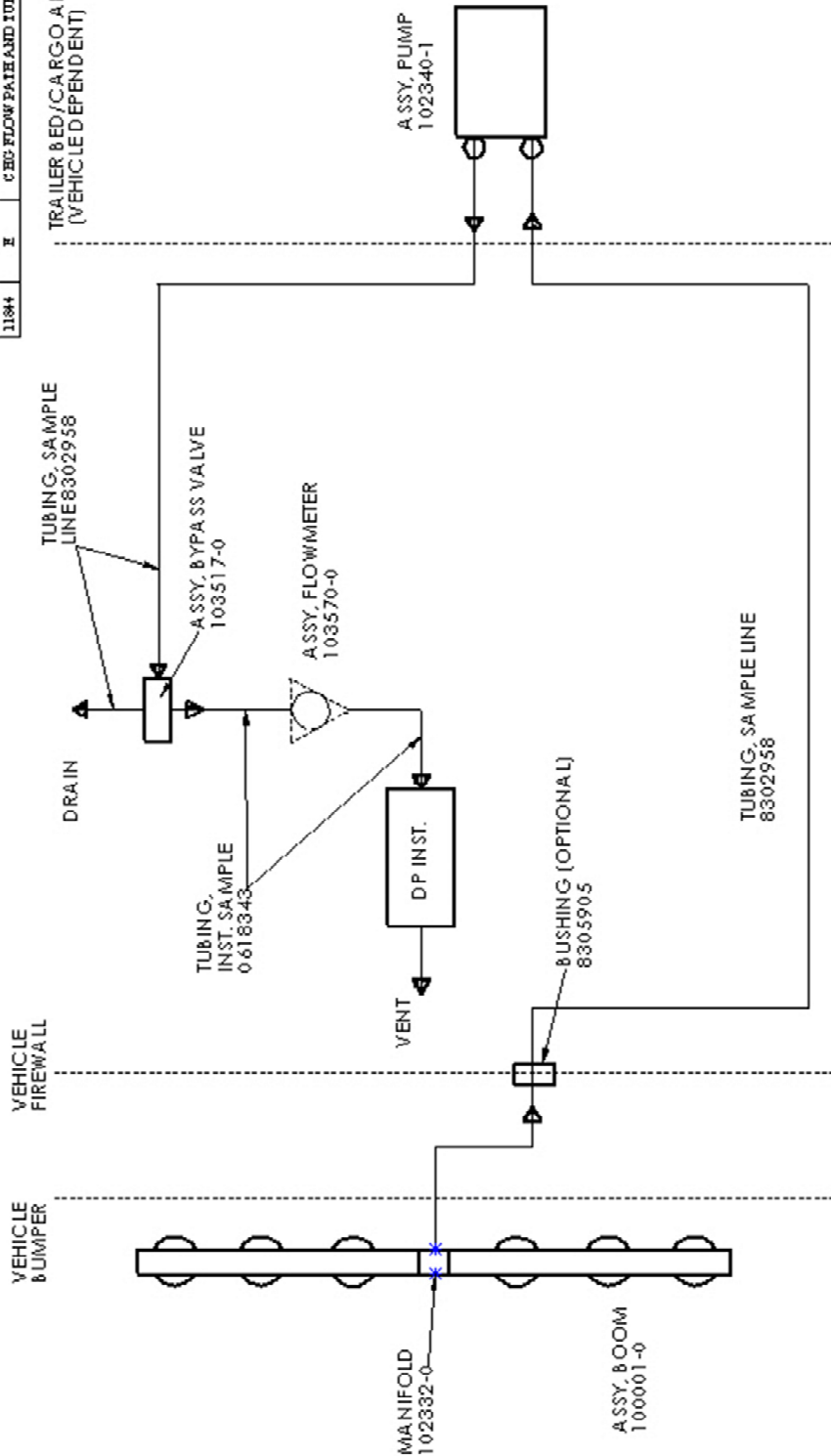


- NOTES:**
- MANIFOLD IS PART OF THE BOOM ASSY. TUBING FOR ASSY IS 8301846
 - DASH LINES REPRESENT DIVIDERS AND ARE NOT PART OF THE KIT
 - PUMP LOCATION MAY DIFFER DEPENDING ON VEHICLE.

Schematic, Flow 6 Cone, Drawing 102333

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	BY
11332	D	C'EG-FLOW PATH	11-29-10	DEF
11844	E	C'EG-FLOW PATH AND TUBING	5-28-15	MMG

TRAILER BED/CARGO AREA
(VEHICLE DEPENDENT)



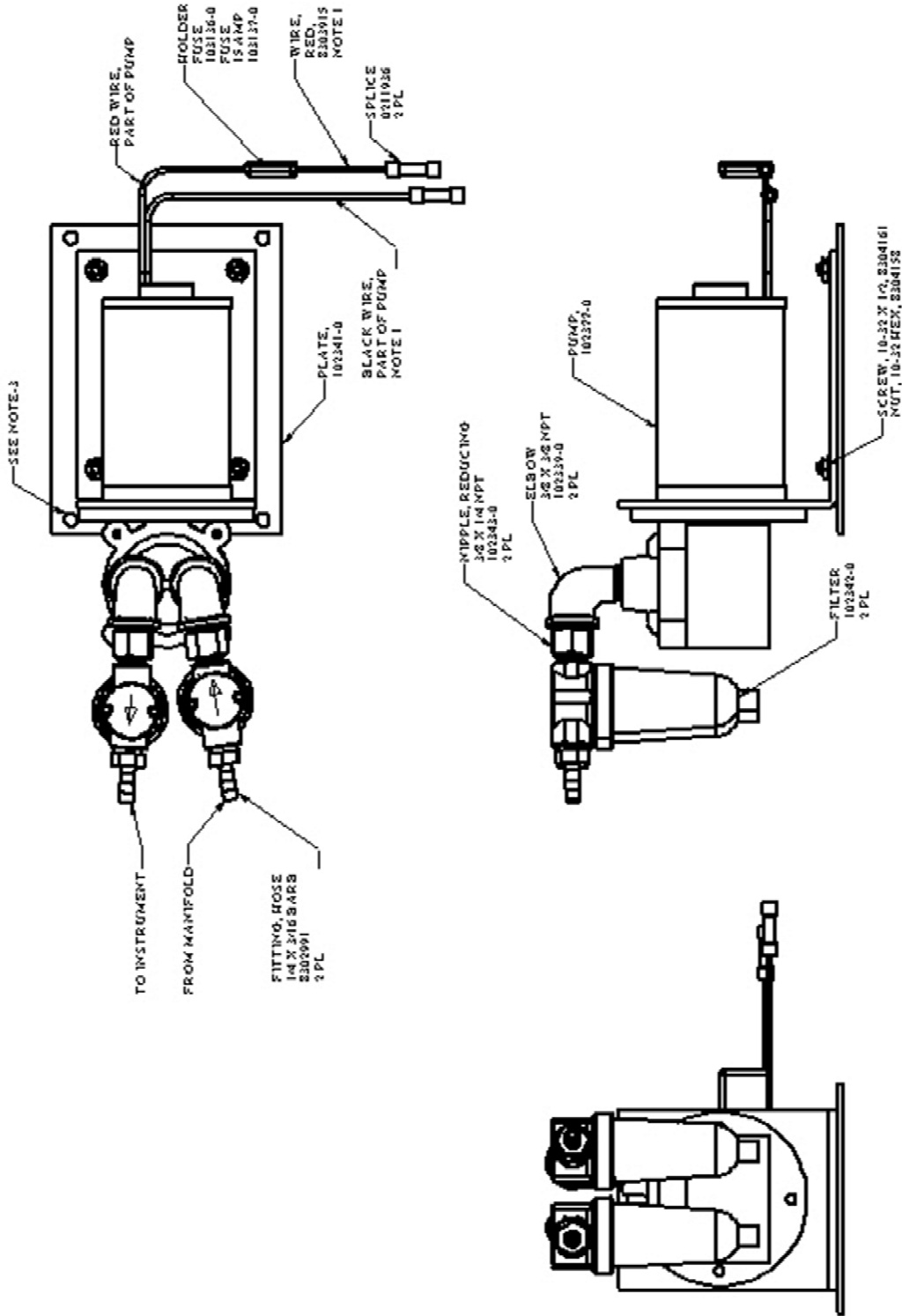
	9030 Monroe Road Houston, Texas 77061 (713) 844-1300	
	FILE NAME: 102333-0 SCHEMATIC, 6 CONE SIZE: DRAWING No: B 102333 SCALE: DO NOT SCALE DRAWING	
TITLE: SCHEMATIC, FLOW, MOBILE KIT, 6 CONE		
DRAWN BY: MMG DATE: 5-28-2015		
CHECKED BY: DATE:		
PERISE: N/A		
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MATERIAL: SEE COMPUTER ROOM 102331-0		

UNITS OF MEASUREMENT DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS: 3.3, 4.0 FRACTIONS: 3.3, 4.0 ANGULAR: 3.3, 4.0	DRAWN BY: MMG DATE: 5-28-2015
CHECKED BY: DATE:	PERISE: N/A

- NOTES:
- MANIFOLD IS PART OF THE BOOM ASSY. TUBING FOR ASSY IS 8301846
 - DASH LINES REPRESENT DIVIDERS AND ARE NOT PART OF THE KIT
 - PUMP LOCATION MAY DIFFER DEPENDING ON VEHICLE

Assembly Pump Drawing 102340-1

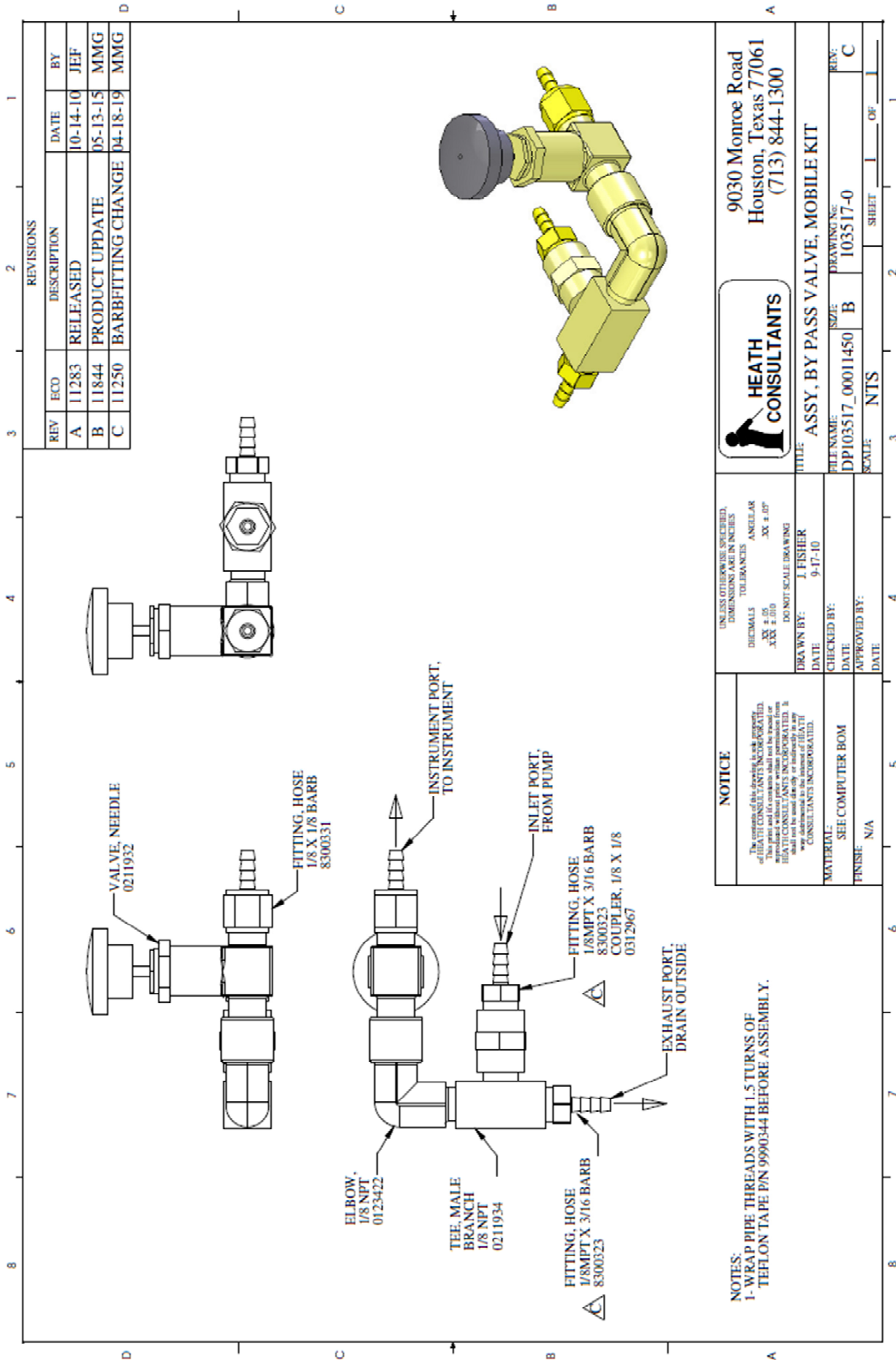
REVISIONS			
REV	DESCRIPTION	DATE	BY
C	11283 ADDED DASH -1	9-12-10	JEF
D	11421 REMOVE BOM ITEM 13 CHO WIRE FROM KIT	5-18-11	JEF
E	11244 ADD NOTE FOR MTE HW'R	5-13-13	M/MO



- NOTES:
- 1 FINISHED WIRES TO BE 20 INCHES LONG FROM MOTOR TO SPLICES
 - 2 WRAP ALL BRASS PIPE FITTINGS WITH 1 STURNS OF TEFLON TAPE P/N 9990344 PRIOR TO ASSEMBLY
 - 3 MOUNTING HARDWARE 1/4-20X1-1/2 SCREWS, 2306610 AND 1/4-20 LOCKNUTS, 2304159, NOT SHOWN DUE TO VEHICLE VARIATION #10-16X1-1/4 SELF DRILLING SCREWS, 1044809, MAY BE SUBSTITUTED OR ONE NOT IN THIS KIT

	9030 Monroe Road Houston, Texas 77061 (713) 844-1300
	FILE ASSY. PUMP, MOBILE KIT
DRAWN BY: S. J. BROWN DATE: 05-13-13	CHECKED BY: J. J. BROWN DATE: 05-13-13
PROJECT NO: 102340-1	SHEET NO: 1 OF 1

Assembly, Bypass Valve Drawing 103517-0



REVISIONS				
REV	ECO	DESCRIPTION	DATE	BY
A	11283	RELEASED	10-14-10	JEF
B	11844	PRODUCT UPDATE	05-13-15	MMG
C	11250	BARBFITTING CHANGE	04-18-19	MMG

	9030 Monroe Road Houston, Texas 77061 (713) 844-1300	
	ASSY, BY PASS VALVE, MOBILE KIT	
FILE NAME:	SIZE:	DRAWING NO:
DPI03517_00011450	B	103517-0
SCALE:	NTS	SHEET
		OF
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES	DIGITALS	ANGULAR
.XX ± .05	.XX ± .01	.XX ± .01°
.XXX ± .010		
DO NOT SCALE DRAWING	DRAWN BY:	J. FISHER
	DATE:	9-17-10
	CHECKED BY:	
	DATE:	
	APPROVED BY:	
	DATE:	
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	FINISH:	N/A

NOTES:
1- WRAP PIPE THREADS WITH 1.5 TURNS OF
TEFLON TAPE P/N 9990344 BEFORE ASSEMBLY.

CHECK LIST FOR ABOVE MOBILE SET UP (REFERENCE ONLY)

1. Instrument set up:
 - a. Using DP-IR
 - i. Check filters _____
 - ii. Recommended alarm setting – as close to zero as possible without alarm constantly going off - set at _____
 - b. Using HFI
 - i. Check filter _____
 - ii. Recommended alarm setting – 10 ppm. Instead of placing needle on zero it is suggested that you adjust needle to just below alarm setting, without constantly going off. This will help with small leak indications by reacting quicker. Adjusted _____
 - iii. Review survey speed _____
2. Cones on front bumper
 - a. No more than 2 inches above surface _____
 - b. Check integrity of cones _____
 - c. With instrument running, check at each cone, with a known sample of methane / natural gas. This is a bump test. _____
3. External pump
 - a. Check filters on front of pump - two jars with filter inside

 - b. Check LPM gauge - attach to instrument. Should be reading pump intake of 1.2 to 2 Liters per minute. Make sure by-pass is fully open – explain purpose of by-pass.

 - c. Show how to attach vacuum gauge to pump to check if operating properly, recommend obtaining one for inspection of pump.

4. Review weekly maintenance.
 - a. Blow out of sample tubes each week with air from inlet side of pump to cones
 - b. Check screen filters on cones

Name _____

Location _____ Date _____

Evaluator _____

Comments _____

Heath Consultants Incorporated operates under a continual product improvement program and reserves the right to make improvements and/or changes without prior notification.



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www.heathus.com PH: 713.844.1300