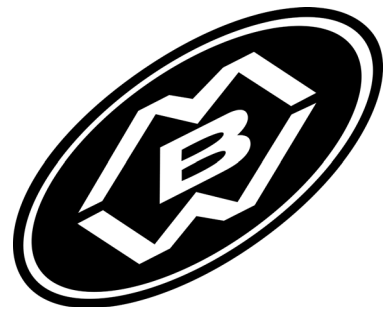


# OPERATOR'S SAFETY AND SERVICE MANUAL



## VAPOR EXTRACTION UNIT

This manual covers the following serial numbers  
and higher for each model listed:

85422D.....8540153



## UTILITY DIVISION

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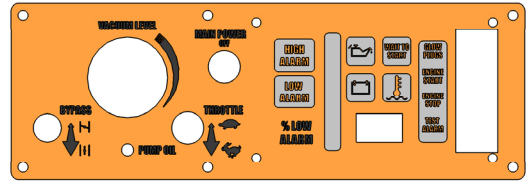
L19266 / 6.21.X  
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**DIESEL FUEL**

01623  
19257  
**(ON FUEL TANK)**

**CAUTION**  
DO NOT expose sensor to shock or vibration.  
Allow sensor to finish warm-up cycle prior to use.  
Calibrate sensor prior to first use, and as directed by manual  
19257

19257  
**(ON SENSOR STAND)**



20123

**VAPOR EXTRACTION UNIT**

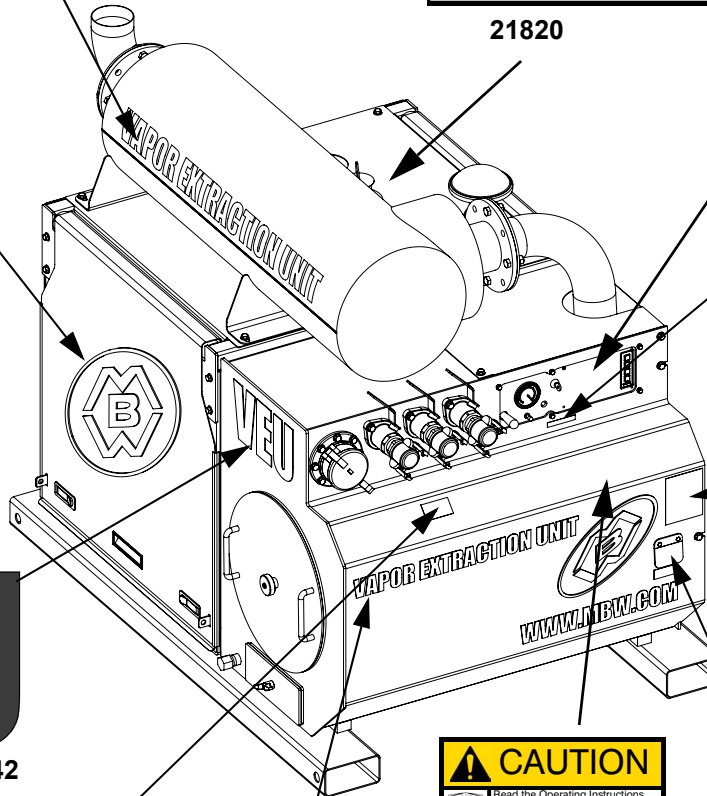
20241

**WARNING**  
Operating, servicing and maintaining this equipment can expose you to chemicals, including engine exhaust, phthalates and lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. Avoid breathing engine exhaust. Do not operate equipment in confined areas. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
21820



20239

**U.S. PATENT 7,210,336**  
19380



**OPERATING INSTRUCTIONS**

1. Ensure gas concentration in work area is safe for open ignition sources. **DO NOT** use machine in areas that are unsafe.
2. Open bypass valve fully, close all vacuum supply valves on canister, open valves on probes.
3. Plug sensor lead into socket below engine control box.
4. The "Wait to start" light will light during the sensor's 4 minute warm-up routine. **Engine will not run until this period is complete.**
5. Start engine. If cold, wait for glowplugs.
6. Warm up engine at idle.
7. Run engine speed up to approximately 30%.
8. While watching LEL percent on sensor, slowly begin opening vacuum supply valve.

**NOTE:** Gas stream through the VEU must remain below 25% LEL. If Low alarm is triggered, close vacuum supply valve, open bypass valve, and start again. If High alarm is reached, engine will shut down. Press "Reset" button, and start at step 5.

9. After vacuum supply valve is open fully, run engine up to full throttle, and begin to close bypass valve. See note above.
10. After bypass valve is closed fully, run engine as needed to evacuate ground of gas.
11. If desired, turning off individual probes can help locate leak.
12. Before shutting down engine, allow it to idle 1-2 minutes to cool.

19259

**VEU**  
20242

**WARNING**  
High suction can cause serious injury.  
Keep all body parts away from vacuum ports.  
19242

19242

**CAUTION**  
Read the Operating Instructions before operating this piece of equipment.  
Keep unauthorized and untrained people away from this equipment.  
**ROTATING & MOVING PARTS!** Make sure all guards and safety devices are in place.  
Wear approved hearing protection, foot protection, eye protection and head protection.  
**SHUT OFF** the motor before servicing or cleaning.  
**DO NOT RUN** in an enclosed area. The engine produces carbon monoxide, a **POISONOUS GAS**.  
Failure to comply could result in serious bodily injury.  
13483

**SENSOR STAND PLUG**  
Engine will not run unless sensor is plugged in  
19240

19240

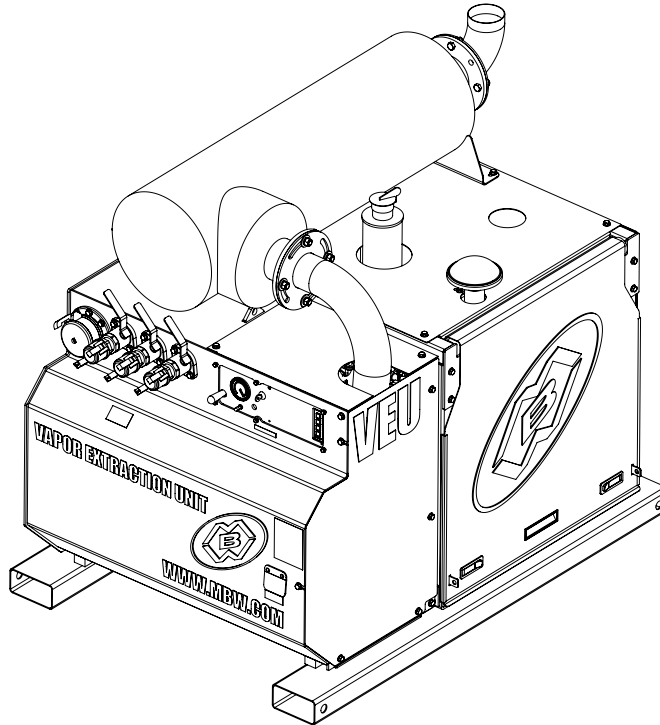
**VAPOR EXTRACTION UNIT**



**WWW.MBW.COM**  
20240

Safety Decals

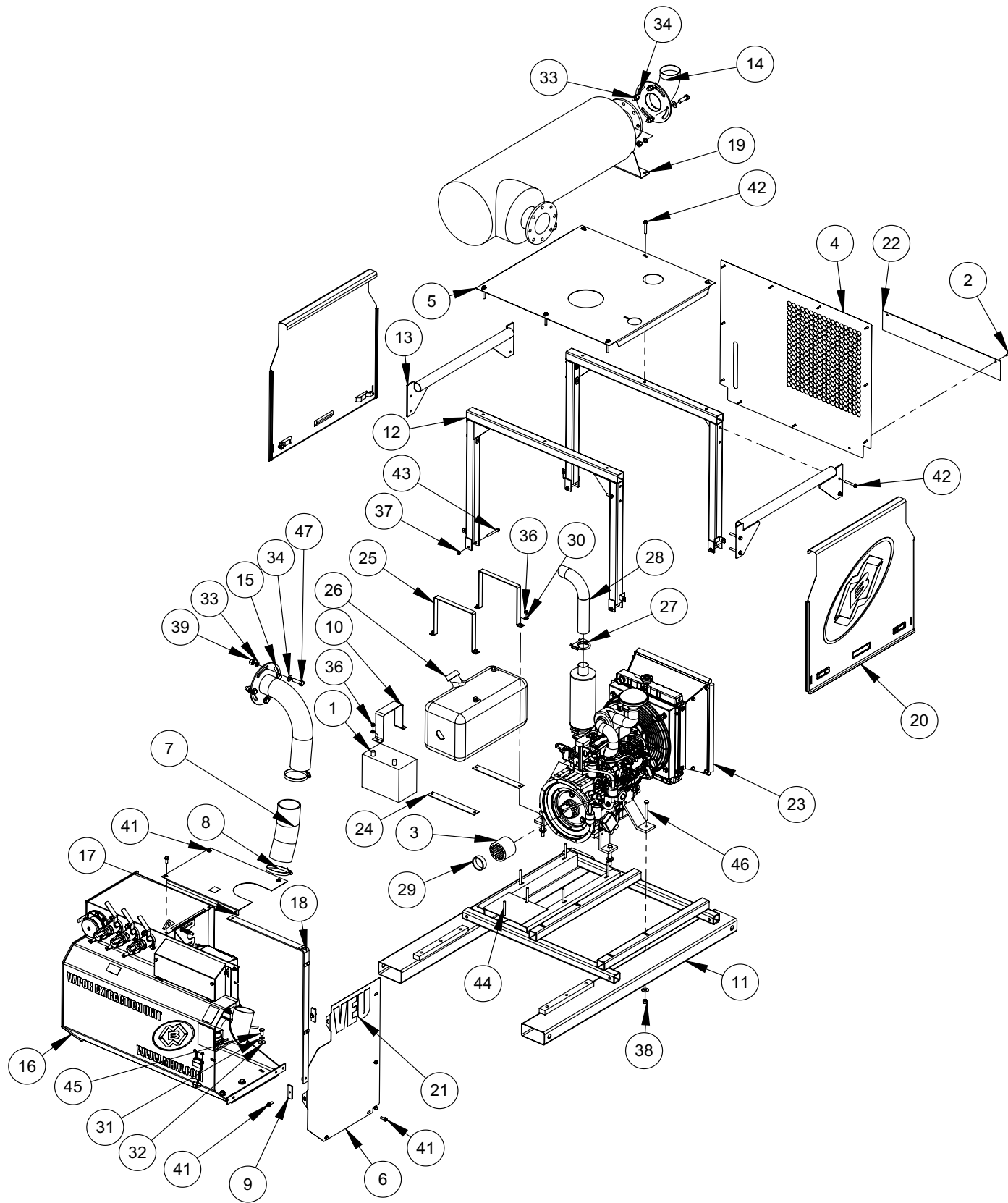
# SPECIFICATIONS



<b>Operating Weight</b>	1430 LBS (648 KG)
<b>Height</b>	47.5" (113 cm)
<b>Width</b>	43" (109 cm)
<b>Length</b>	65" (165cm)
<b>Engine</b>	Isuzu 3CH1
<b>Recommended Engine RPM</b>	2500 rpm
<b>Fuel Consumption</b>	1.0 Gal/hr
<b>Fuel Capacity</b>	8 gallons (30.3L)
<b>Blower</b>	Tuthill 850 cfm
<b>Recommended Vacuum</b>	6"Hg
<b>Operating Noise Level<sup>1</sup></b>	90-100 db
<b>Gas Monitor</b>	Industrial Scientific Itrans w/ LEL
<b>Alarm Threshold</b>	35% LEL
<b>Engine Stop Threshold</b>	50% LEL
<b>Max Flow Rate Per Probe</b>	19 cfm

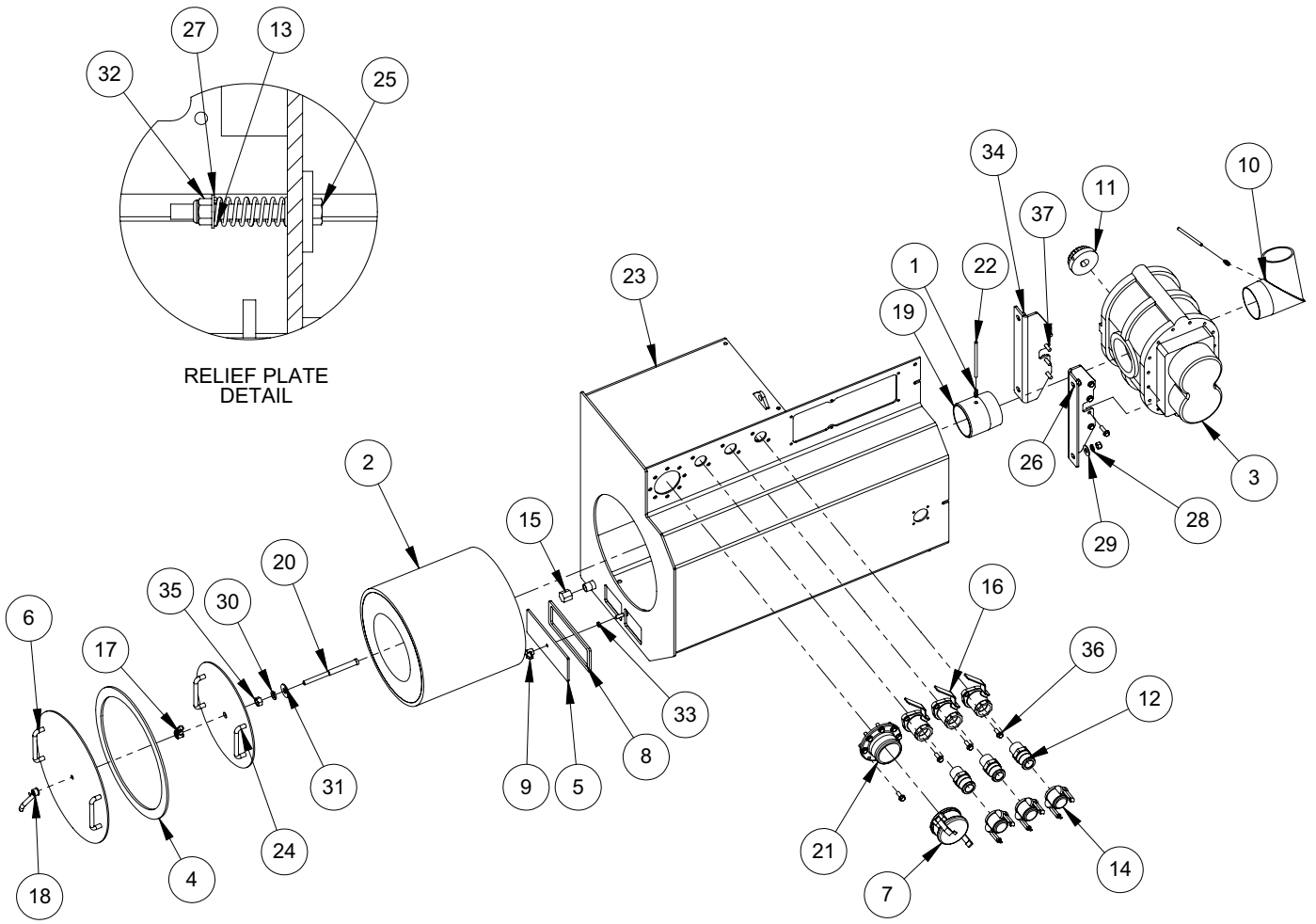
Specifications subject to change without notice

1. Noise levels are taken at the operating position and are based on operating conditions. Background noise will increase noise levels.



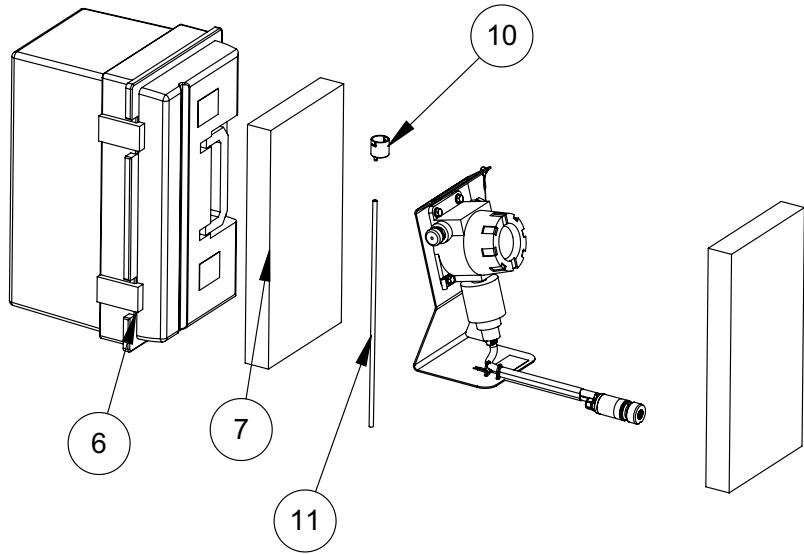
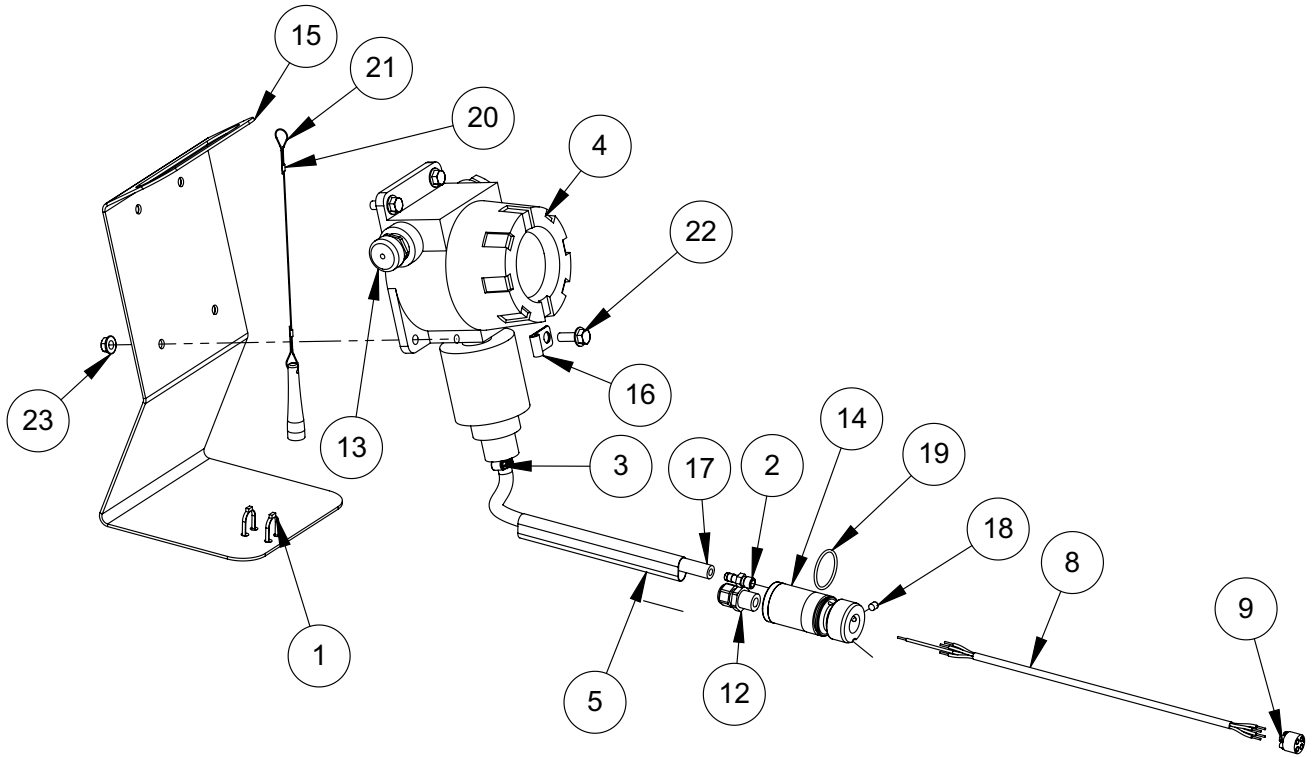
# Main Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	09247	BATTERY	1
2.	11162	SCREW, 1/4 X 1 TEKS	12
3.	18923	COUPLER, GEAR GRIP, TUBE	1
4.	20050	PANEL, RADIATOR	1
5.	20051	PANEL, ROOF	1
6.	20052	PANEL, BLOWER END	1
7.	20053	HOSE, 4.0 X 12	1
8.	20054	HOSE CLAMP, 4"	2
9.	20055	PLATE, THREADED	2
10.	20057	STRAP, BATTERY	1
11.	20061	FRAME, VEU	1
12.	20068	UPPER FRAME, VEU	2
13.	20074	CROSS MEMBER, UPPER VEU FRAME	2
14.	20077	ELBOW, EXHAUST	1
15.	20080	INLET ADAPTER, SILENCER	1
16.	20082	ASM, CANISTER AND BLOWER (See Canister and Blower Assembly, page 14)	1
17.	20091	PANEL, BLOWER ROOF	1
18.	20104	SUPPORT, ROOF AND WALL	1
19.	20106	SILENCER ASM	1
20.	20109	DOOR ASM, VEU	2
21.	20242	DECAL, VEU CANISTER, SIDE	1
22.	20443	SHROUD, FRONT, VEU	1
23.	20961	ENGINE ASM, ISUZU 3CH1	1
24.	20989	SUPPORT, FUEL TANK, 8 GALLON	2
25.	20990	STRAP, FUEL TANK	2
26.	20994	FUEL TANK, 8 GALLON	1
27.	21070	EXHAUST CLAMP, 2 3/8	1
28.	21321	EXHUAST OUTLET, VEU	1
29.	21676	TUBE, INSERT	1
30.	F06PW	WASHER, 13/32 X 13/16 X 1/16 ZP	6
31.	F08LW	LOCKWASHER, 1/2 ZP	6
32.	F08SW	WASHER, 9/16 X 1-3/8 X 12GA ZP	10
33.	F10LW	LOCKWASHER, 5/8 ZP	8
34.	F10PW	WASHER, 5/8 X 1-1/4 X 12GA ZP	8
35.	F0518FN	NUT, FLANGE WHIZ-LOCK 5/16-18 ZP	1
36.	F0616ELN	LOCKNUT, 3/8-16 NYLOC ZP	6
37.	F0616FN	FLANGE WHIZ-LOCK NUT, 3/8-16	5
38.	F0813ELN	LOCKNUT, 1/2-13 NYLOC ZP	4
39.	F1011HN	NUT, HEX 5/8-11 ZP	8
40.	F051806FWS	FWLS, 5/16-18 X 3/4 ZP	1
41.	F061608FWS	FWLS, 3/8-16 X 1 ZP	11
42.	F061620FWS	FWLS, 3/8-16 X 2-1/2 ZP	14
43.	F061624FWS	FWLS, 3/8-16 X 3 ZP	4
44.	F061628CB	CAR BOLT, 3/8-16 X 3-1/2	6
45.	F081308HCS	HHCS, 1/2-13 X 1 GR5 ZP	6
46.	F081332HCS	HHCS, 1/2-13 X 4 GR5 ZP	4
47.	F101116HCS	HHCS, 5/8-11 X 2 GR5 ZP	8
	22268	ENGINE MOUNT SHIMS	
	22269	ENGINE MOUNT SHIMS	



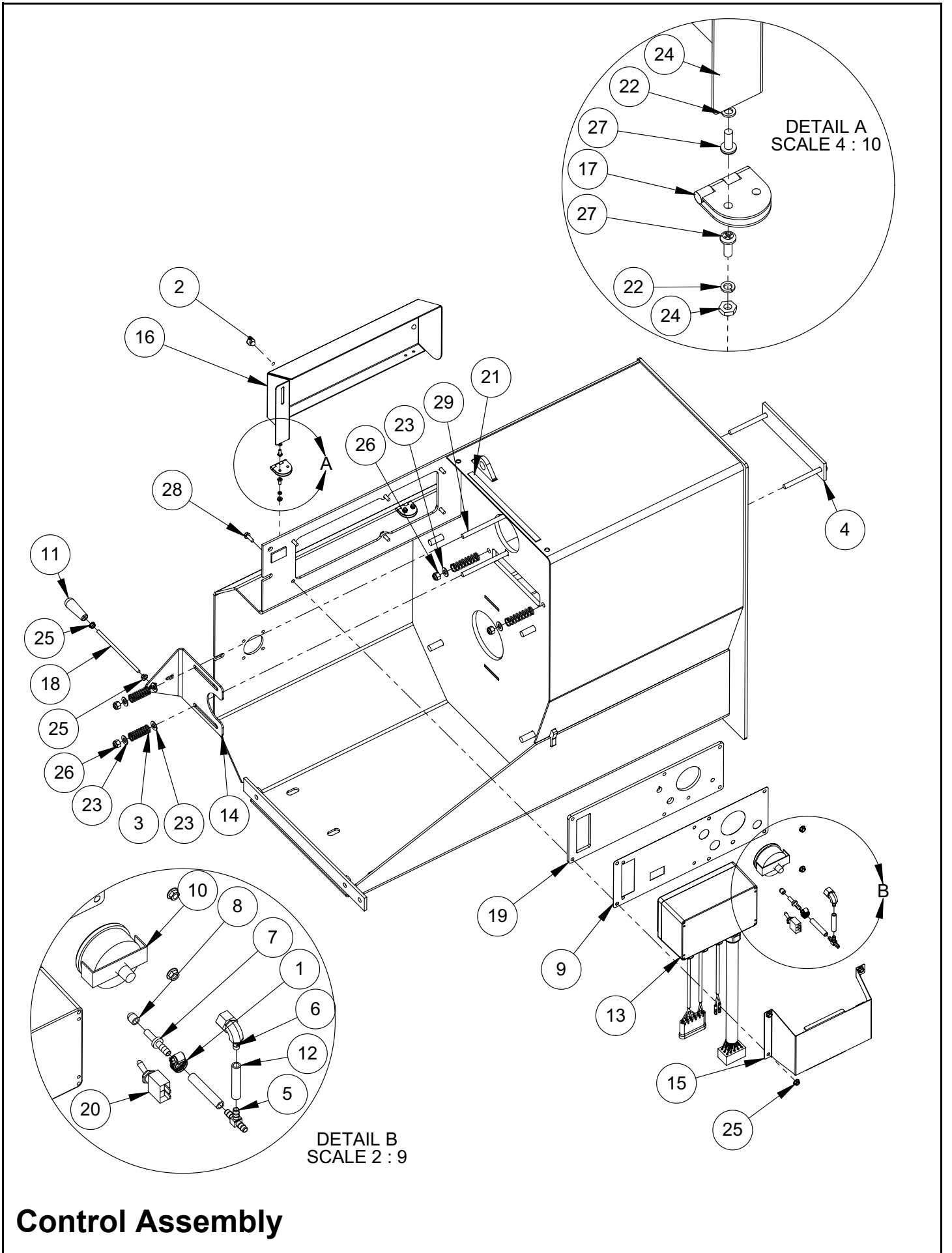
# Canister and Blower Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	05803	MALE PIPE ADAPTER	2
2.	18920	FILTER, VEU	1
3.	18927	BLOWER, TUTHILL	1
4.	18960	GASKET, DOOR	1
5.	18966	COVER, SUMP	1
6.	18972	DOOR, WELDMENT	1
7.	18984	COVER, 3" CAMLOCK	1
8.	18988	GASKET, BILGE	1
9.	18989	KNOB, THUMB	1
10.	18996	ELBOW, SILENCER	1
11.	19047	COUPLER, GEARGRIP, 1-1/8	1
12.	19185	COUPLING, 1-1/4 NPT, CAM LOCK	3
13.	19190	SPRING, COMPRESSION, RELIEF	2
14.	19256	DUST CAP, 1-1/4 FEMALE	3
15.	19455	PIPE CAP, HEX	1
16.	20083	VALVE, FLANGE MOUNT	3
17.	20084	HANDLE, 5/8-11	1
18.	20085	HANDLE, 1/2-13	1
19.	20087	ADAPTER, BLOWER	1
20.	20088	DOOR ROD, CANISTER	1
21.	20092	FITTING, 3" CAMLOCK	1
22.	20093	HOSE, 1/4 x 18	2
23.	20095	CANISTER, WELDMENT	1
24.	20102	FILTER CAP, WELDMENT	1
25.	20103	ASM, RELIEF PLATE	1
26.	20210	MOUNTING FOOT, BLOWER, PAINTED	2
27.	F06PW	WASHER, 13/32 x 13/16 x 1/16 ZP	2
28.	F08LW	LOCKWASHER, 1/2 ZP	4
29.	F08SW	WASHER, 9/16 x 1-3/8 x 12GA ZP	4
30.	F10LW	LOCKWASHER, 5/8 ZP	1
31.	F10SW	WASHER, 11/16 x 1-3/4 x 12GA ZP	1
32.	F0616ELN	LOCKNUT, 3/8-16 NYLOC ZP	2
33.	F0616HJN	NUT, HEX JAM 3/8-16 ZP	1
34.	F0813HN	NUT, HEX 1/2-13 ZP	4
35.	F1011HN	NUT, HEX 5/8-11 ZP	1
36.	F061608FWS	FWLS, 3/8-16 x 1 ZP	14
37.	F061610FWS	FWLS, 3/8-16 x 1-1/4 ZP	8
	19263	BLOWER OIL, 1 QT	
	19821	PREFILTER, FOAM	



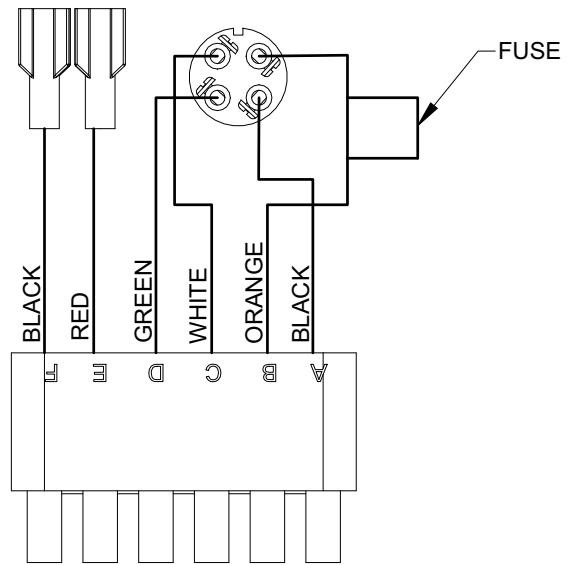
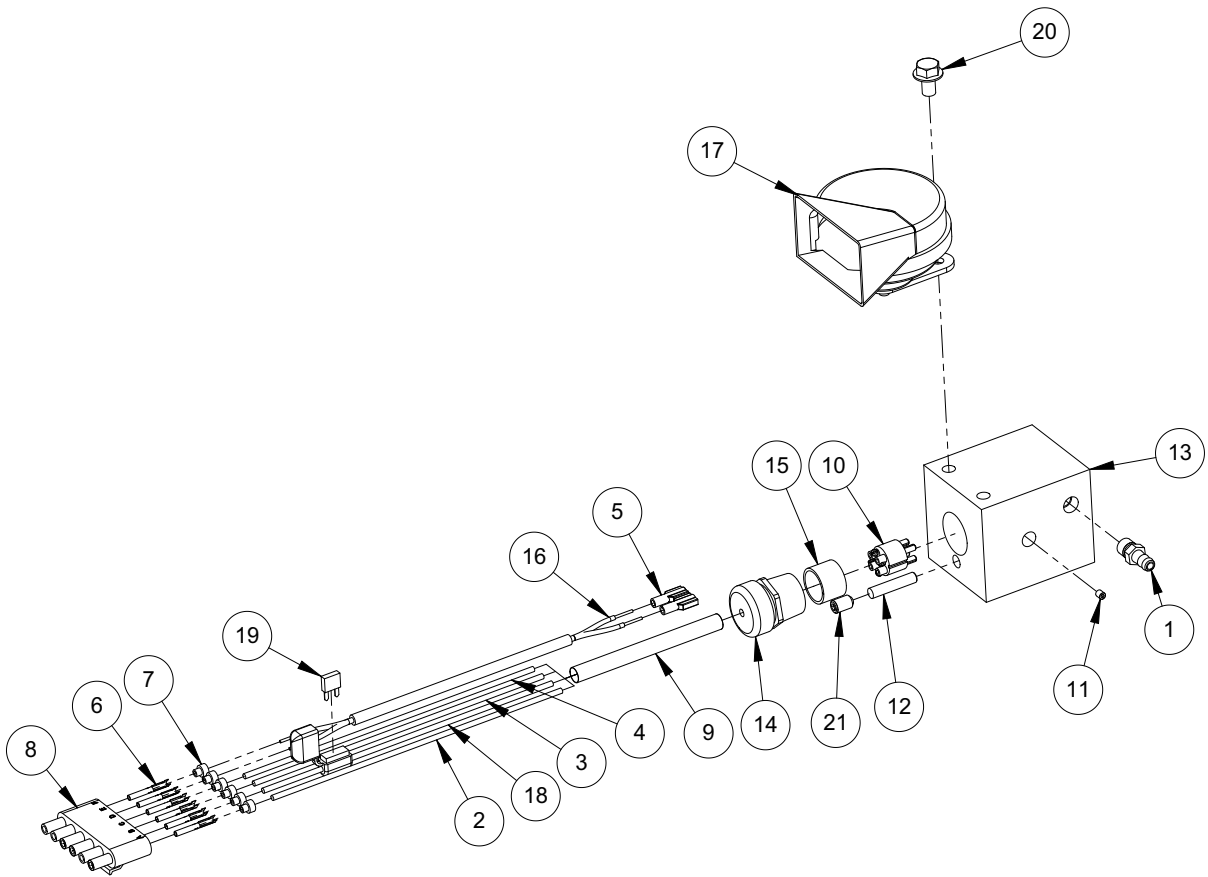
## Sensor Stand Assembly





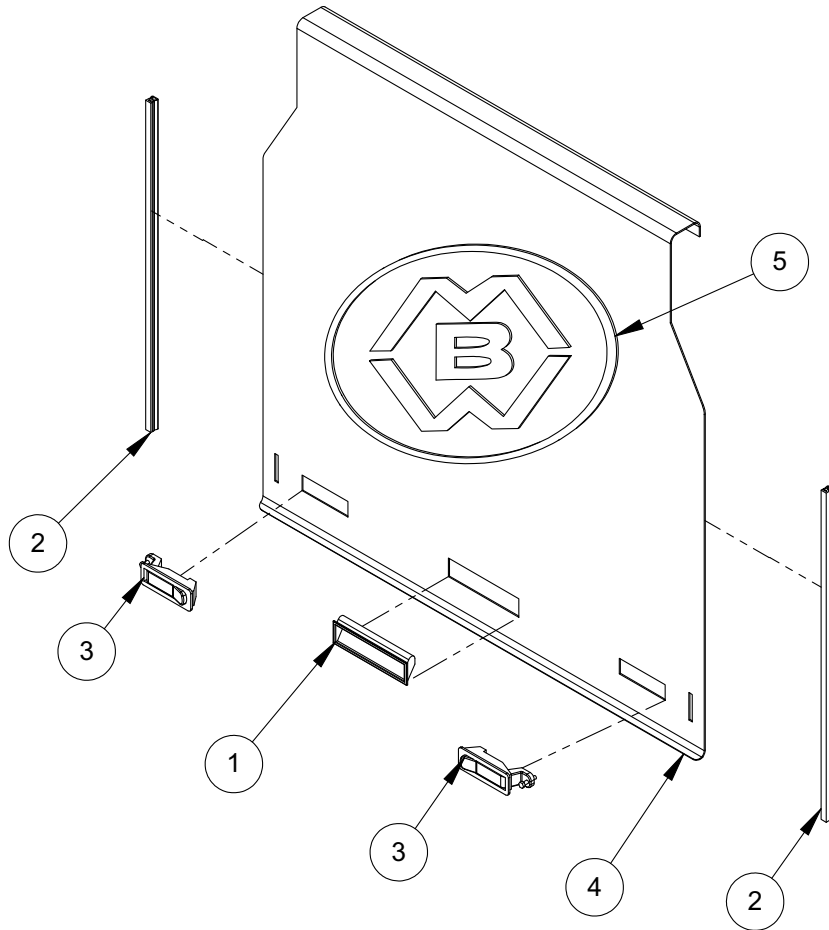
**Control Assembly**





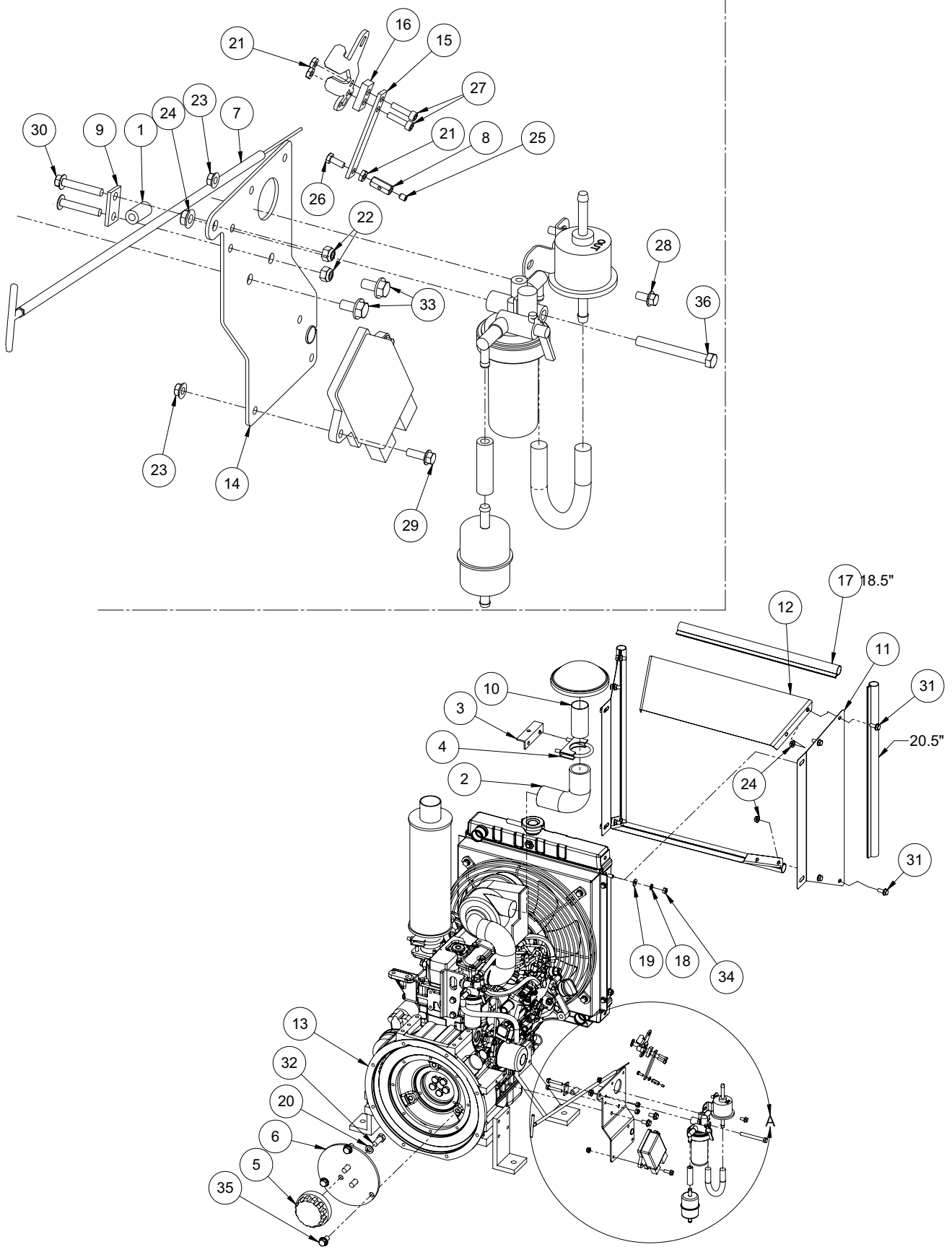
# Plug Assembly





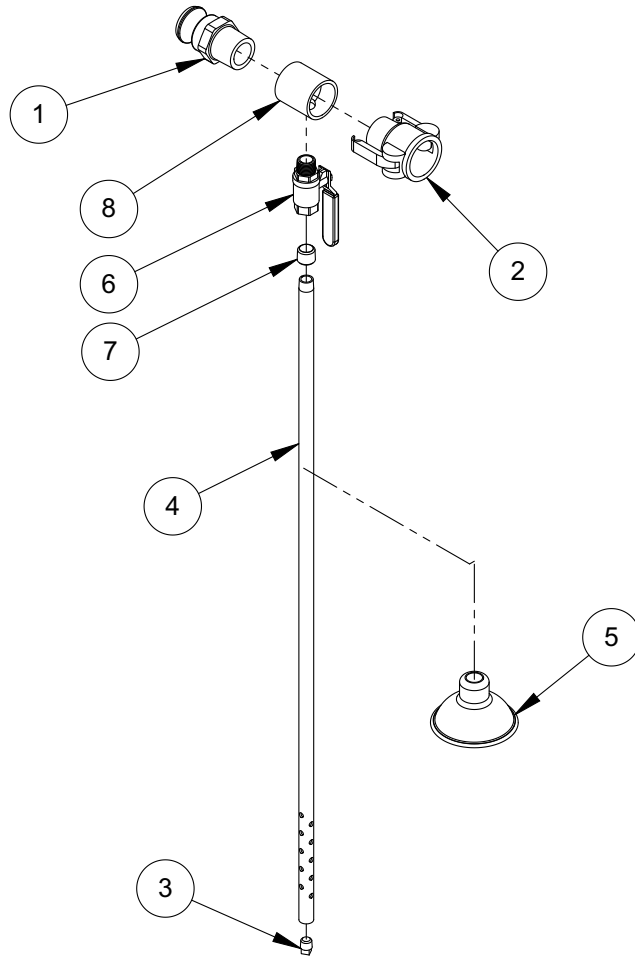
## Door Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	20110	DOOR HANDLE, SNAP IN	1
2.	20111	EDGING, DOOR	21"
3.	20112	LATCH, DOOR	2
4.	20113	PANEL, DOOR	1
5.	20239	DECAL, VEU DOOR	1
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# Engine Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1.	06029	FUEL LINE, 1/4" BULK	1
2.	09214	PIPE, INLET	1
3.	20059	BRACKET, INTAKE	1
4.	20060	EXHAUST CLAMP, 2"	1
5.	20131	COUPLER, GEARGRIP, 1-7/16	1
6.	20133	ADAPTER PLATE, 3CB1	1
7.	20136	CABLE, THROTTLE CONTROL	1
8.	20138	THROTTLE CLAMP SWIVEL	1
9.	20140	THROTTLE CABLE CLAMP	1
10.	20147	TUBE, INTAKE	1
11.	20197	RAD SHROUD, SIDE, PAINTED	2
12.	20198	RAD SHROUD, TOP, PAINTED	2
13.	20962	ENGINE, ISUZU 3CH1	1
14.	20964	THROTTLE BRACKET, PAINTED	1
15.	20965	THROTTLE EXTENSION	1
16.	20967	THROTTLE SPACER	1
17.	20995	SEAL, EDGE GRIP	78"
18.	F05LW	LOCKWASHER, 5/16 ZP	4
19.	F05SW	WASHER, 5/16 X 3/4 X 15GA ZP	4
20.	F08LW	LOCKWASHER, 1/2 ZP	3
21.	F0324HN	NUT, HEX #10-24 ZP	1
22.	F0420ELN	LOCKNUT, 1/4-20 NYLOC	5
23.	F0420FN	FLANGE WHIZ-LOCK NUT 1/4-20	4
24.	F0518FN	NUT, FLANGE WHIZ-LOCK 5/16-18 ZP	12
25.	F032402SSS	SSS, #10-24 X 1/4	1
26.	F032404HCS	HHCS, #10-24 X 1/2 GR5 ZP	1
27.	F032406SCS	SCS, #10-24 X 3/4	2
28.	F042004FWS	FWLS, 1/4-20 X 1/2 ZP	2
29.	F042006FWS	FWLS, 1/4-20 X 3/4 ZP	2
30.	F0420012FWS	FWLS, 1/4-20 X 1-1/2 ZP	3
31.	F051806FWS	FWLS, 5/16-18 X 3/4 ZP	10
32.	F081310HCS	HHCS, 1/2-13 X 1-1/4 GR5 ZP	3
33.	M08C016FWS	FWS, M8 X 16	2
34.	M08CHN	NUT, HEX M8 X 1.25 ZP	4
35.	M12C020FWS	FWS, M12 X 20	3
36.	F051822HCS	HHCS, 5/16-18 X 2-3/4 GR5 ZP	1
	20352	ISUZU OIL FILTER	
	20351	ISUZU AIR FILTER	
	20353	ISUZU CARTRIDGE FUEL FILTER	
	21040	ISUZU INLINE FUEL FILTER	



## Probe and Hose Assemblies

