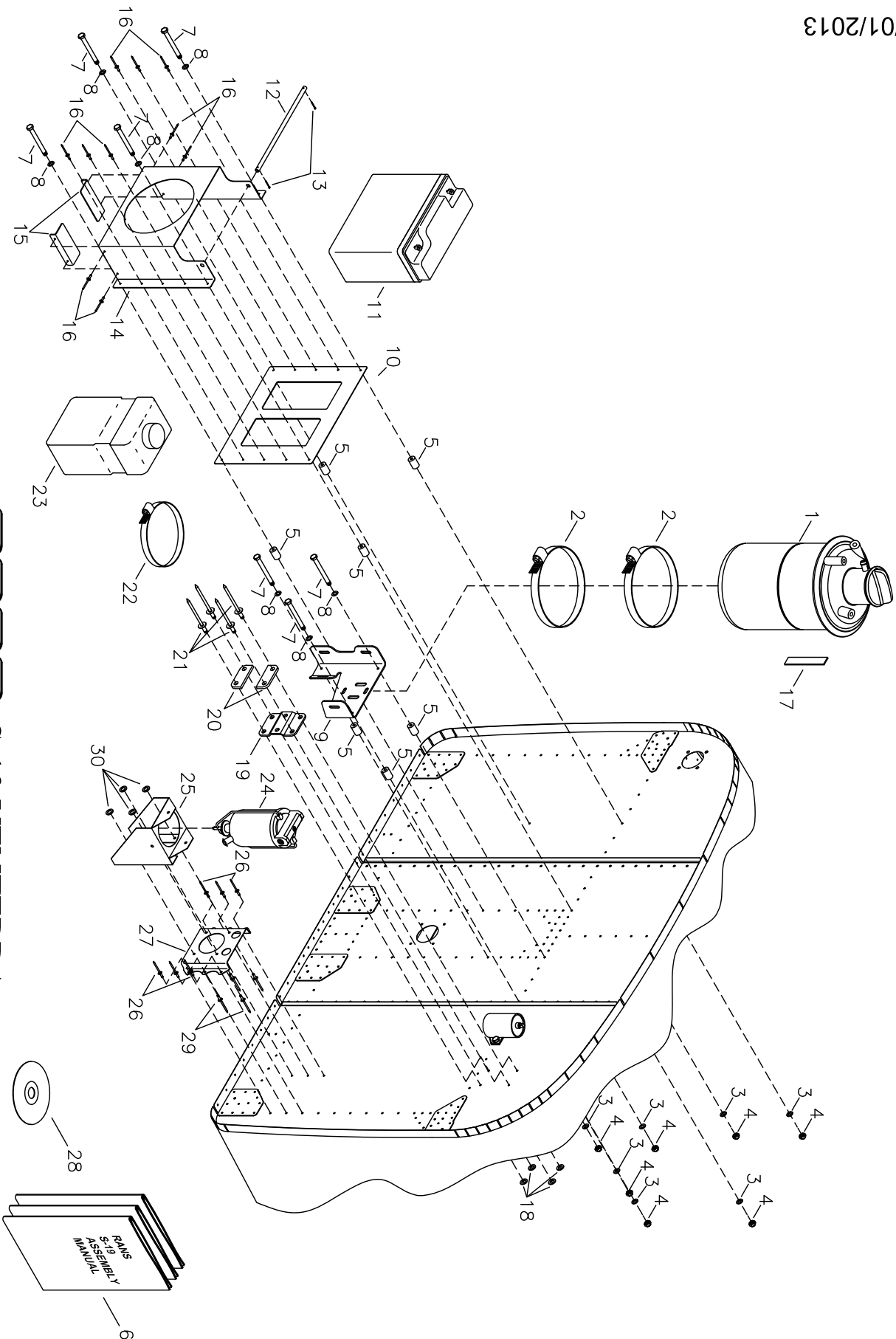


13 – ROTAX 912ULS ENGINE INSTALLATION

ROTAX 912ULS - FIREWALL ITEMS INSTALLATION	13-01 - 13-02
ROTAX 912ULS - ENGINE MOUNT INSTALLATION	13A-01 - 13A-02
ROTAX 912ULS - FUEL SYSTEM INSTALL - FIREWALL FWD.....	13B-01 - 13B-02
ROTAX 912ULS - COOLING SYSTEM INSTALLATION.....	13C-01 - 13C-02
ROTAX 912ULS - LUBRICATION SYSTEM INSTALLATION	13D-01 - 13D-02
ROTAX 912ULS - MUFFLER / HEATER WRAP ASSY & INSTALL.....	13E-01 - 13E-02
ROTAX 912ULS - CABIN HEATER INSTALLATION	13E-03 - 13E-04
ROTAX 912ULS - THROTTLE & CHOKE CABLE INSTALLATION	13F-01 - 13F-02
ROTAX 912ULS - ENGINE ELECTRICAL.....	13G-01 - 13G-02
ROTAX 912ULS - ANALOG INSTRUMENTS/ELECTRICAL	13G-03 - 13G-04
ROTAX 912ULS - SENSENICH COMPOSITE PROPELLER	13H-01 - 13H-02
ROTAX 912ULS - OPTIONAL AIRBOX ASSEMBLY	13I-01 - 13I-02
ROTAX 912ULS - OPTIONAL REMOTE CHARGING POST.....	13J-01 - 13J-02



ROTAX S-19 VENTERA
ROTAX 912ULS
FIREWALL ITEMS INSTALLATION

MD5135
REV. A

Shown with Optional Gascolator Install

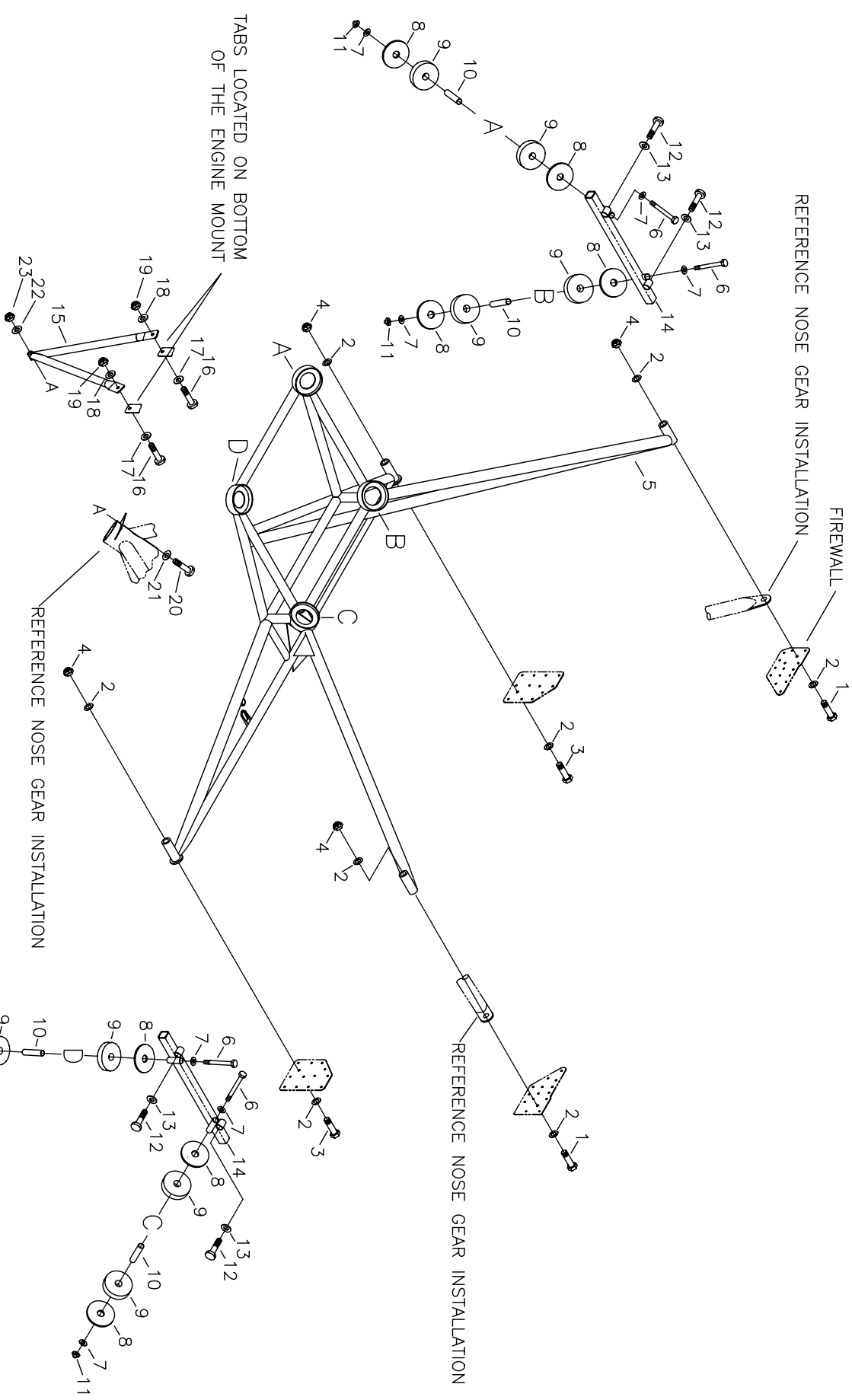
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Oil Tank *	-----	0
2.	Hose Clamp - 6"	5-5288	2
3.	3/16" Thick Washer	AN960-10	7
4.	3/16" Tensile Nut	AN365-1032A	7
5.	3/8" x 0.058" x 1/2" Aluminum Bushing ***	KAAC0044-3	0
6.	S-19 Assembly Manual on CD - 912uls Engine	S-19 Assembly Manual	1
7.	3/16" Bolt	AN3-11A	7
8.	3/16" Thin Washer	AN960-10L	7
9.	Oil Bottle Mount	KPPW0261	1
10.	Battery Box Mount Plate	BAT-BOX-2	1
11.	Battery ****	PS12150-NB	0
12.	Battery Bar	BAT-BAR-503/582	1
13.	Cotter Pin - Small	MS24665-134	2
14.	Battery Box - Front Plate	BAT-BOX-1	1
15.	Battery Box - Support Angles	BAT-BOX-3	2
16.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	10
17.	1" Black Foam Tape	KSAC0011	3 in.
18.	1/8" Small Brass Washer	AN960-B4	4
19.	Mount Bracket - Coolant Recovery Bottle	KPPW0231	1
20.	Spacer Shim - Mount Bracket	KPPW0230	2
21.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-44	4
22.	Hose Clamp - 4"	5-5256	1
23.	Overflow Bottle	KSPW0072	1
24.	Gascolator **	-----	0
25.	Gascolator Bracket **	-----	0
26.	1/8" Stainless Steel Rivet - Cherry Q *****	CCPQ-41	6
27.	Gascolator Mount *****	KPPW0277	1
28.	S-19 Installation DVD - 912uls Engine	KPPW0285	1
29.	1/8" Stainless Steel Rivet - Cherry Q *****	CCPQ-42	4
30.	1/8" Small Brass Washer *****	AN960-B4	4

* Supplied with engine ** Referenced from Fuel System Installation - Firewall Forward

*** Builder fabricates from raw stock ****Available from RANS Parts Dept

***** Optional Gascolator Install

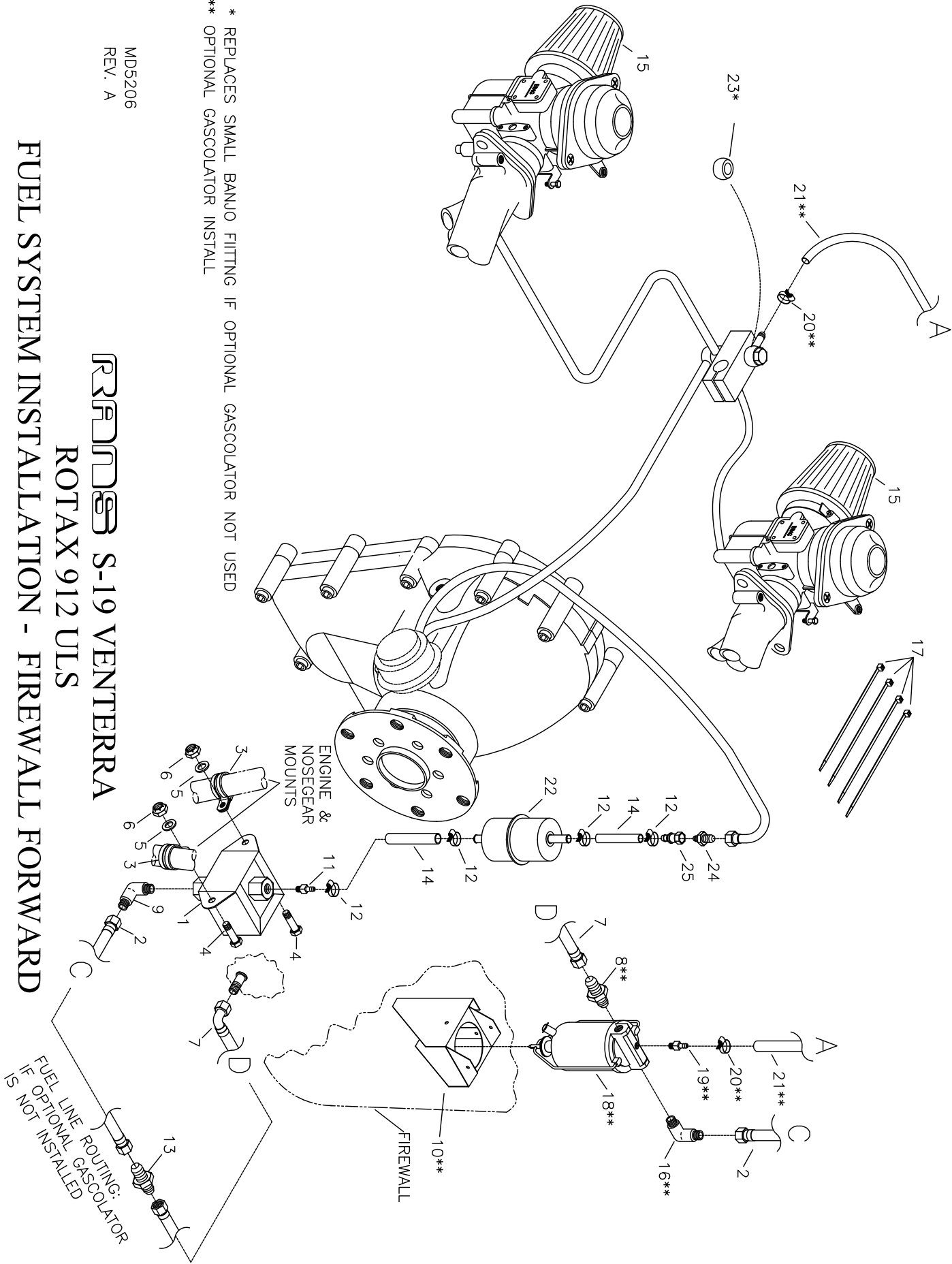
4/1/2013



Rotax S-19 Ventera Rotax 912ULS ENGINE MOUNT INSTALLATION

MD5084

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	5/16" Bolt	AN5-22A	2
2.	5/16" Thick Washer	AN960-516	8
3.	5/16" Bolt	AN5-21A	2
4.	5/16" Steel Tensile Nut	AN365-524C	4
5.	Engine Mount	KPPW0274	1
6.	3/8" Bolt	AN6-33A	4
7.	3/8" Thick Washer	AN960-616	8
8.	Washer	912DONUT-2	8
9.	Rubber Washer	912DONUT-3	8
10.	Bushing	912DONUT-4	4
11.	3/8" Loc-Nut	MS21045-6	4
12.	10mm Bolt	875-550	4
13.	10mm Loc-Washer	945-753	4
14.	912 Engine Attachment	EG-FEA-912	2
15.	Engine Mount Brace	KPPW0273	1
16.	3/16" Bolt	AN3-5A	2
17.	3/16" Thin Washer	AN960-10L	2
18.	3/16" Thick Washer	AN960-10	2
19.	3/16" Tensile Nut	AN365-1032A	2
20.	1/4" Bolt	AN4-10A	1
21.	1/4" Thin Washer	AN960-416L	1
22.	1/4" Thick Washer	AN960-416	1
23.	1/4" Tensile Nut	AN365-428A	1



* REPLACES SMALL BANJO FITTING IF OPTIONAL GASCOLATOR NOT USED
** OPTIONAL GASCOLATOR INSTALL

MD5206
REV. A

ROTAX S-19 VENTERRA
ROTAX 912 ULS

FUEL SYSTEM INSTALLATION - FIREWALL FORWARD

Shown with Optional Gascolator Install

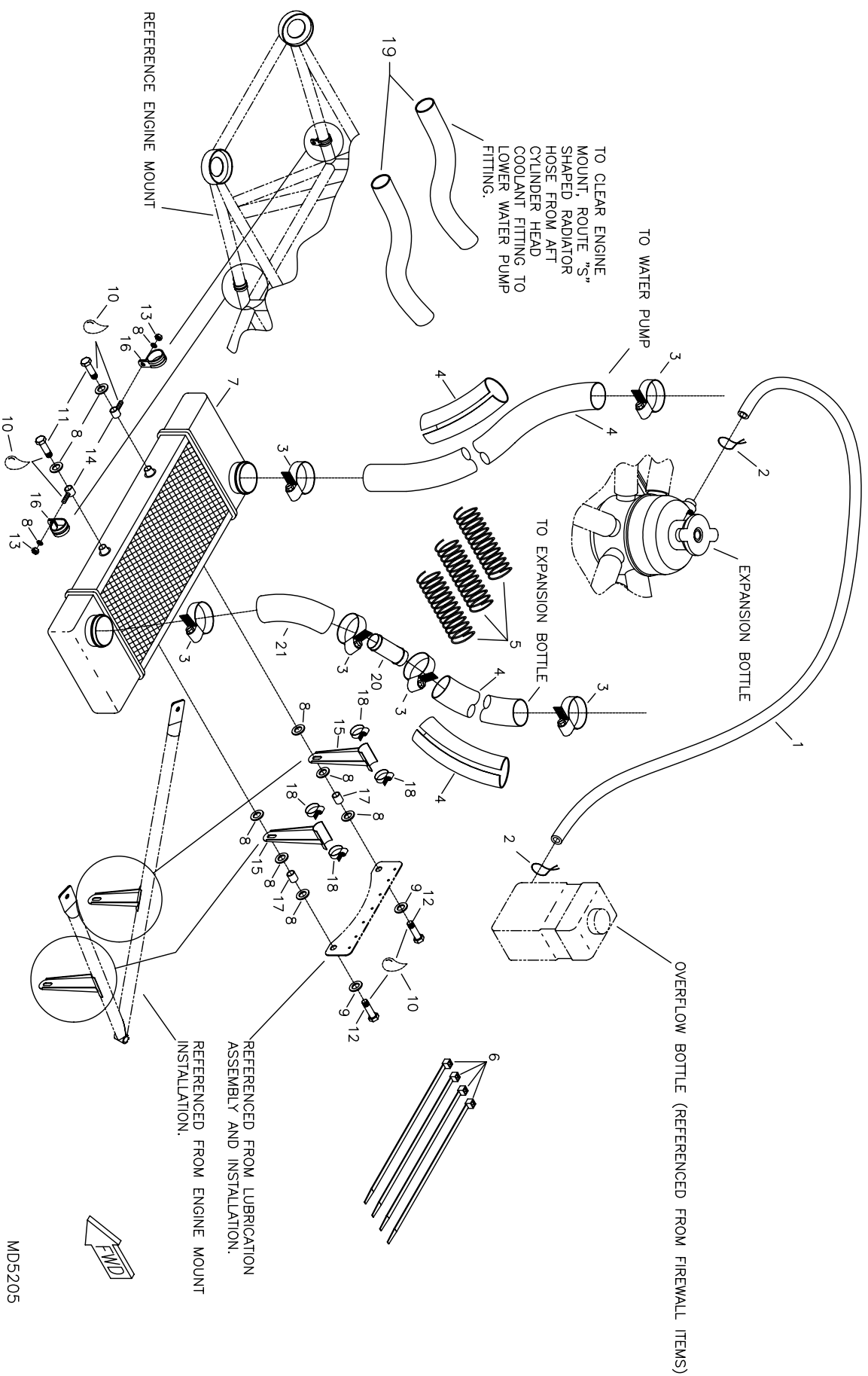
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Fuel Pump	KSPW0077	1
2.	Fuel Line - Gascolator to Fuel Pump	KPFS0091	1
3.	3/4" Cushioned Clamp	MS21919-DG12	2
4.	3/16" Bolt	AN3-4A	2
5.	3/16" Thin Washer	AN960-10L	2
6.	3/16" Shear Nut	AN364-1032A	2
7.	Fuel Line - Firewall to Gascolator	KPFS0090	1
8.	Straight Fitting ***	AN816-6D	1
9.	90-Degree Fitting	AN822-6-2D	1
10.	Gascolator Bracket ***	KSPW0066	1
11.	Straight Fitting	8330	1
12.	Hose Clamp - 5/8"	5-6202	4
13.	Union - Flared Tube (-1 - Optional Gascolator)	AN815-6D	1
14.	1/4" Fuel Line *	-----	0
15.	Air Filter * **	EG-AF-912	0
16.	90-Degree Fitting ***	AN822-6D	1
17.	Nylon Tie	N-TIES	4
18.	Gascolator ***	KSPW0067	1
19.	Straight Fitting ***	8330	1
20.	Hose Clamp - 5/8" ***	5-6202	2
21.	1/4" Black Fuel Line ***	KSFS0002	3 ft
22.	Fuel Filter * ****	-----	0
23.	Bushing (-1 - Optional Gascolator)	BPBK0018	1
24.	Reducer - External Thread - Flared Tube	AN919-6D	1
25.	1/4" Hose Fitting	30682-4-4	1

* Builder Supplied ** Available from RANS Parts Dept

*** Optional Gascolator Install

**** Contact ROTAX for Recommended Fuel Filter

4/1/2013



ROTAX S-19 VENTERA ROTAX 912ULS COOLING SYSTEM INSTALLATION

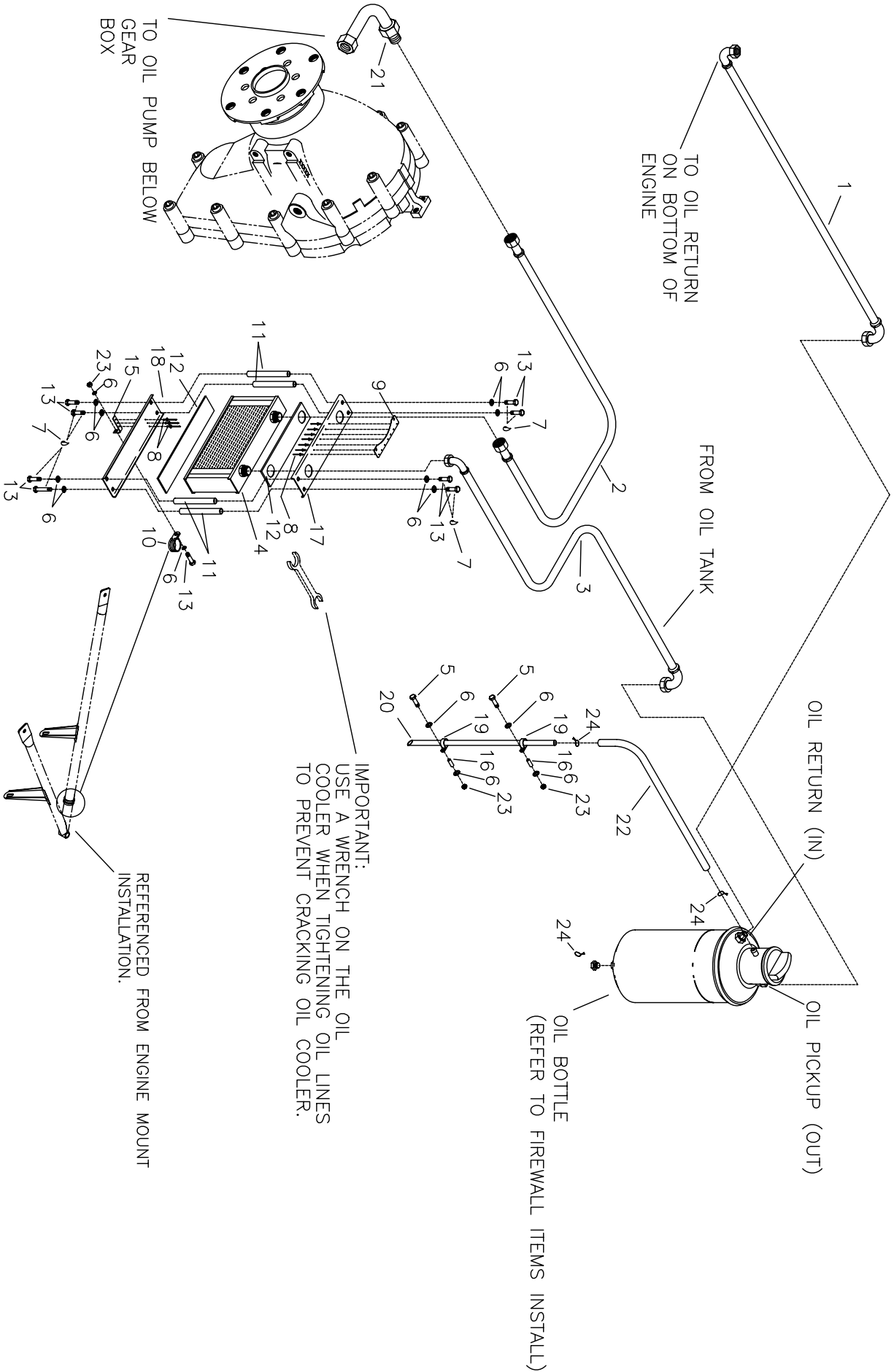
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	5/16" Overflow Hose	EGCS-OFH	3 ft.
2.	Safety Wire *	-----	0
3.	Hose Clamp - 1 1/2"	5-5216	6
4.	Radiator Hose - 1"	RADIATOR HOSE	3 ft.
5.	Hose Spring	EGCS-HS	3
6.	Nylon Tie	N-TIES	4
7.	Radiator	KSPW0071	1
8.	1/4" Thick Washer	AN960-416	10
9.	1/4" Thin Washer	AN960-416L	2
10.	Loctite *	-----	0
11.	6MM Bolt	M6X16 BOLT	2
12.	6MM Bolt	M6X30 BOLT	2
13.	6mm Hex Nut	6MM HEX NUT	2
14.	Radiator Mount	KPPW0278	2
15.	Radiator Mount	KPPW0279	2
16.	5/8" Cushioned Clamp	MS21919-DG10	2
17.	3/8" x 0.058" x 1/2" Aluminum Bushing **	KAAC0044-3	0
18.	Hose Clamp - 7/8"	5-6203	4
19.	Pre-formed Radiator "S" Hose	KSPW0025	2
20.	Cooling Tube Union	KPPW0189	1
21.	Pre-formed Radiator "U" Shaped Hose ***	KSPW0075	1

* Builder Supplied

** Builder fabricates from raw stock

*** Builder modifies

4/1/2011

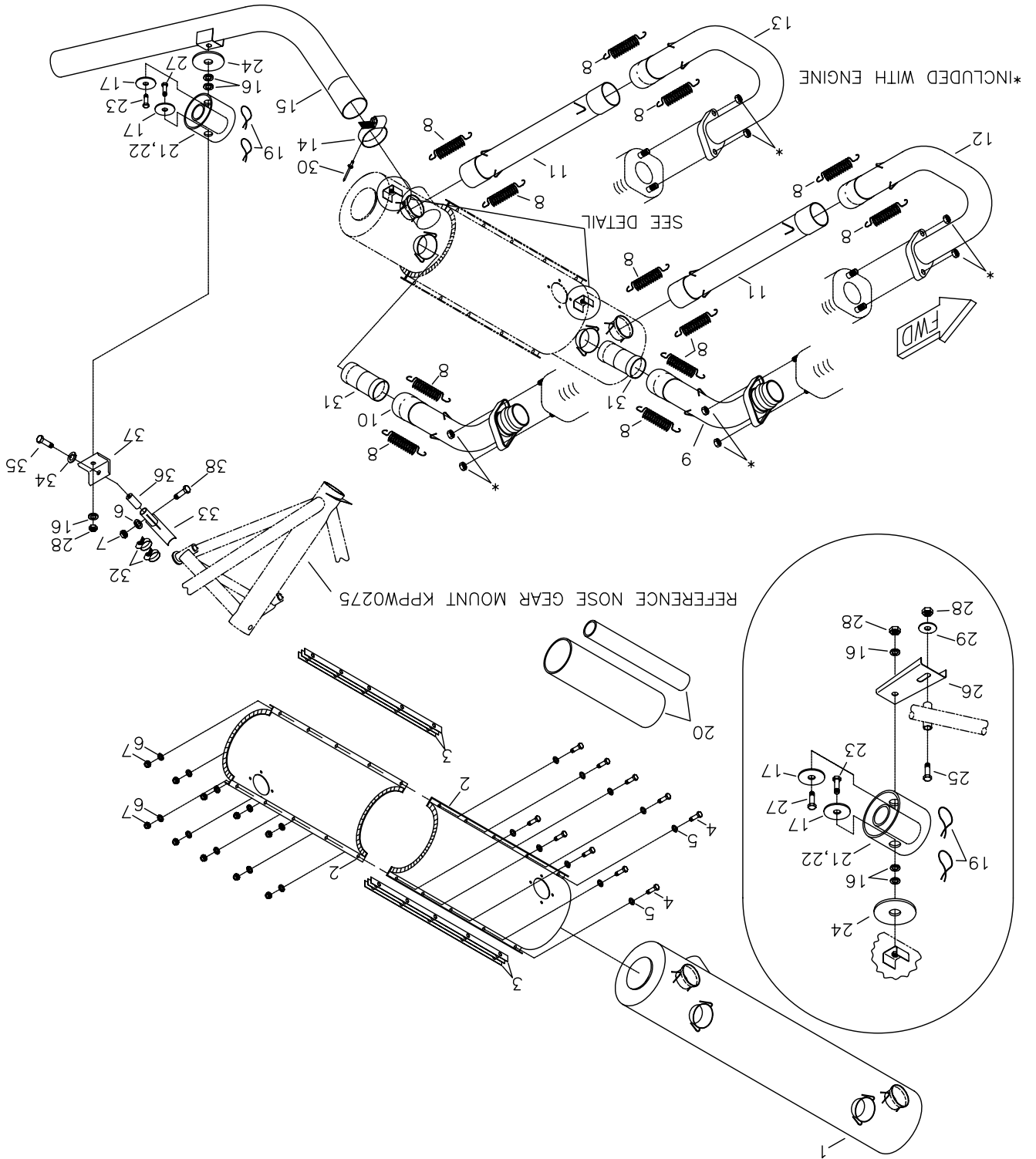


ROTAX S-19 VENTERRA
ROTAX 912ULS
LUBRICATION ASSEMBLY AND INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Oil Hose Assembly - Tank to Cooler	KAPW0041	1
2.	Oil Hose Assembly - Pump to Cooler	KAPW0042	1
3.	Oil Hose Assembly - Return	KAPW0045	1
4.	Oil Cooler	KSPW0085	1
5.	3/16" Bolt	AN3-11A	2
6.	3/16" Thin Washer	AN960-10L	14
7.	Loctite **	-----	0
8.	1/8" Stainless Steel Rivet - Flush	CCC-42	10
9.	Oil Cooler Mount Bracket	KPPW0271	1
10.	1/2" Cushioned Clamp	MS21919-DG8	1
11.	Threaded Bushing - Oil Cooler	KPPW0280	4
12.	.093 Silicone Sheet *	KPPW0254	2
13.	3/16" Bolt	AN3-4A	9
14.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	7
15.	Oil Cooler Mount Strap ***	KAAC0044-13	1
16.	3/8" x 0.058" x 3/4" Aluminum Bushing ***	KAAC0044-3	0
17.	Oil Cooler Mount - Upper	KPPW0272	1
18.	Oil Cooler Mount - Lower	KPPW0276	1
19.	Plain Clamp	AN742-D6	2
20.	3/8" x .035" Aluminum Tube *	KAAC0044-14	1
21.	90-Degree Fitting - Long	KSPW0082	1
22.	Medium Temperature Tubing	KSPW0069	2 ft.
23.	3/16" Shear Nut	AN364-1032A	3
24.	Safety Wire **	-----	0

ROTAX 912ULS MUFFLER / HEATER WRAP ASSEMBLY AND INSTALLATION

MD5201



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	S-19 Muffler	KPEX0071	1
2.	Heater Wrap	KPSY0070	2
3.	Shim - Heater Wrap	KPSY0071	8
4.	3/16" Bolt	AN3-4A	10
5.	3/16" Thin Washer	AN960-10L	10
6.	3/16" Thick Washer	AN960-10	11
7.	3/16" Steel Shear Nut	AN364-1032C	11
8.	Muffler Spring	KSEX0002	12
9.	Aft Top Pipe - RH	KPEX0069	1
10.	Aft Top Pipe - LH	KPEX0070	1
11.	Forward Manifold #2 Pipe	KPEX0068	2
12.	Forward Manifold #1 Pipe - RH	KPEX0022	1
13.	Forward Manifold #1 Pipe - LH	KPEX0020	1
14.	Hose Clamp - 2 1/4"	5-5228	1
15.	Tail Pipe Extension	KPEX0067	1
16.	1/4" Thick Washer	AN960-416	8
17.	Formed Washer	KPAC0053	6
18.	6mm Hex Nut	6MM HEX NUT	3
19.	Safety Wire *	-----	0
20.	912 Muffler Raw Stock Kit	KAAC0017	1
21.	Rubber Hose - 3/4" o.d. x 1 3/8" **	KAAC0017-1	0
22.	Rubber Hose - 1 1/4" o.d. x 1 3/8" **	KAAC0017-2	0
23.	6MM Bolt	M6X20 BOLT	6
24.	1/8" Aluminum Washer	EG-AW	3
25.	1/4" Bolt	AN4-16A	2
26.	Muffler Attach Channel	KPEX0027	2
27.	1/4" Plain Bolt	KSHW0016	3
28.	1/4" Steel Shear Nut	AN364-428C	5
29.	1/4" Large Washer	AN970-4	2
30.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-44	1
31.	Muffler Canister Coupler	KPEX0072	2
32.	Hose Clamp - 7/8"	5-6203	2
33.	Tail Pipe Support	KPEX0073	1
34.	1/4" Lock Washer	AN935-416L	1
35.	1/4" Bolt	AN4-5A	1
36.	Tail Pipe Support - Bushing	KPEX0074	1
37.	Tail Pipe Support - Angle	KPEX0075	1
38.	3/16" Bolt	AN3-10A	1

* Builder Supplied

** Builder fabricates from raw stock

4/1/2011



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Control Cable	4-336	1
2.	Adjustable Cable Ferrule	12553	1
3.	1/4" Plastic Washer	PW-4	2
4.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	12
5.	1/8" Aluminum Rivet - Cherry Q *	AAPQ-42	0
6.	1-1/2" Cushioned Clamp	MS21919-DG24	2
7.	Inlet Tube	H-OT	1
8.	Air Diverter Assembly	KASY0006	1
9.	Air Diverter - Slide *	KASY0006-1	0
10.	Air Diverter - Body *	KASY0006-2	0
11.	Set Screw	KSHW0043	2
12.	6mm Hex Nut	6MM HEX NUT	1
13.	Reverse Cable Stop	BPHW0006	1
14.	Hose Clamp - 1 3/4"	5-5220	3
15.	1 1/2" Heater Duct / Creet Hose	CREET HOSE	5 ft.
16.	Cabin Heat Shield	KPFU0653	1
17.	Heater Flange Assembly	KPSY0030	2
18.	Cable Friction Block	T-STOP	1
19.	Socket Head Cap Screw	T-SC	1
20.	Nylon Tie - Long	Long-N-Ties	4
21.	6MM Bolt	M6X16 BOLT	1
22.	1/4" Thin Washer	AN960-416L	2
23.	3/8" x 0.058" x 1/2" Aluminum Bushing **	KAAC0044-3	0
24.	6MM Bolt	M6X30 BOLT	1

* Part of Air Diverter Assembly

** Builder fabricates from raw stock

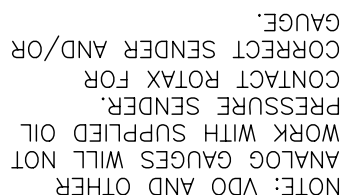


#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Throttle Cable Housing	EG-T-CAB-H	8 ft.
2.	Throttle Cable	EG-T-CAB	2
3.	Cable Conduit Ferrule	2394	6
4.	Double Cable Stop	KPCS0249	2
5.	Mixer Plate	KPPW0076	2
6.	Cable Stop	KPCS0248	2
7.	Wire Swivel/Screw Stop	2361	6
8.	Throttle	KSCS0022	1
9.	Cable Ferrule Cap	ENDCAP-12000	8
10.	Choke Cable Housing	CK-CAB-H	8 ft.
11.	Choke Cable	BC-105	2
12.	Nylon Tie	N-TIES	6
13.	Control Cable	4-336	1
14.	3/16" Bolt	AN3-5A	4
15.	3/16" Thick Washer	AN960-10	4
16.	3/16" Shear Nut	AN364-1032A	4
17.	Safety Wire *	-----	0
18.	3/16" Thin Washer	AN960-10L	4

* Builder Supplied

4/1/2011

*** REFER TO ROTAX
INSTALLATION MANUAL
FOR BREAKER SIZE



THIS DIAGRAM
SHOULD ONLY BE
USED AS A GUIDE

MD5231

REPAIRS S-19 VENTURA
ROTAX 912ULS
ENGINE ELECTRICAL

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Solenoid *	----	0
2.	Regulator/Rectifier *	----	0
3.	Battery **	----	0
4.	Switch ***	----	0
5.	Battery / Ground Cable	KAES0008	1
6.	Battery / Solenoid Cable	KAES0009	1
7.	12 Gauge Wire ***	----	0
8.	14 Gauge Wire ***	----	0
9.	1/4" Bolt	AN4-10A	1
10.	1/4" Steel Shear Nut	AN364-428C	1
11.	1/4" Lock Washer	AN935-416L	2
12.	6mm Hex Nut	6MM HEX NUT	1
13.	Solenoid / Starter Cable	KAES0010	1
14.	Starter / Ground Cable	KAES0011	1
15.	2 Plex 20 Gauge Wire ***	----	0
16.	3/16" Steel Shear Nut	AN364-1032C	2
17.	3/16" Bolt	AN3-3A	2
18.	3/16" Thick Washer	AN960-10	4
19.	3/16" Aluminum Rivet - Cherry Q	AAPQ-62	2
20.	3/16" Bolt	AN3-7A	2
21.	#10 Stainless Steel Washer	BSHW0022	2
22.	3/16" Thin Washer	AN960-10L	2
23.	3/16" Shear Nut	AN364-1032A	2
24.	Thread Sealant ***	----	0
25.	5 Amp Breaker ***	----	0
26.	Electrical Buss Bar *** *****	AMW 636	0
27.	3/8" x 0.058" x 3/16" Aluminum Bushing ****	KAAC0044-3	0
28.	Capacitor - 22,000 microFarad / 25v ***	----	0

* Supplied with Engine ** Referenced from Firewall Items Installation

*** Builder Supplied ***** Builder fabricates from raw stock

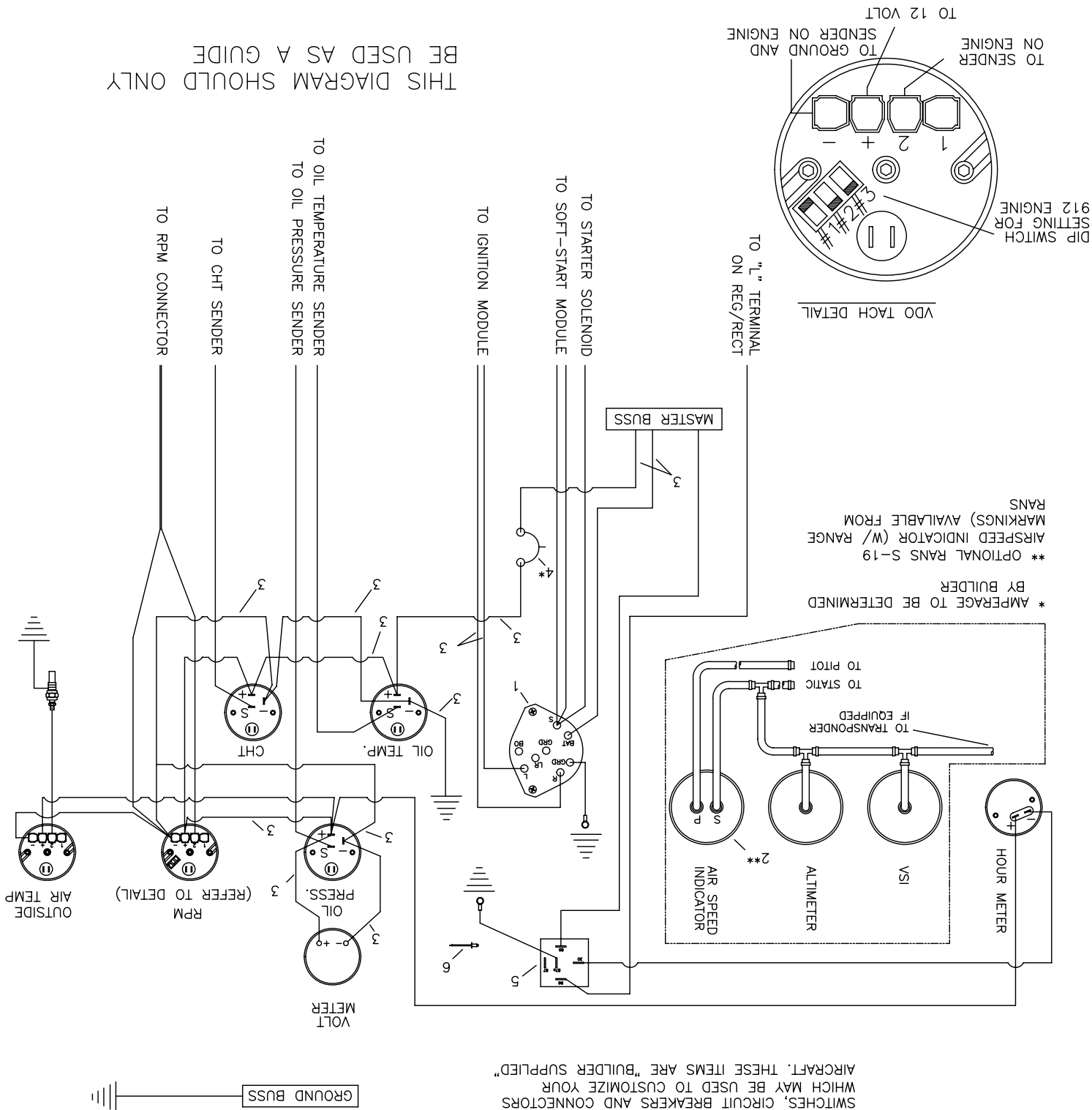
***** Available from RANS Parts Dept

4/1/2011

ANALOG INSTRUMENTS/ELECTRICAL
ROTAX 912ULS
RAN S-19 VENTERA - SAMPLE SCHEMATIC

04/01/2011

MD5231



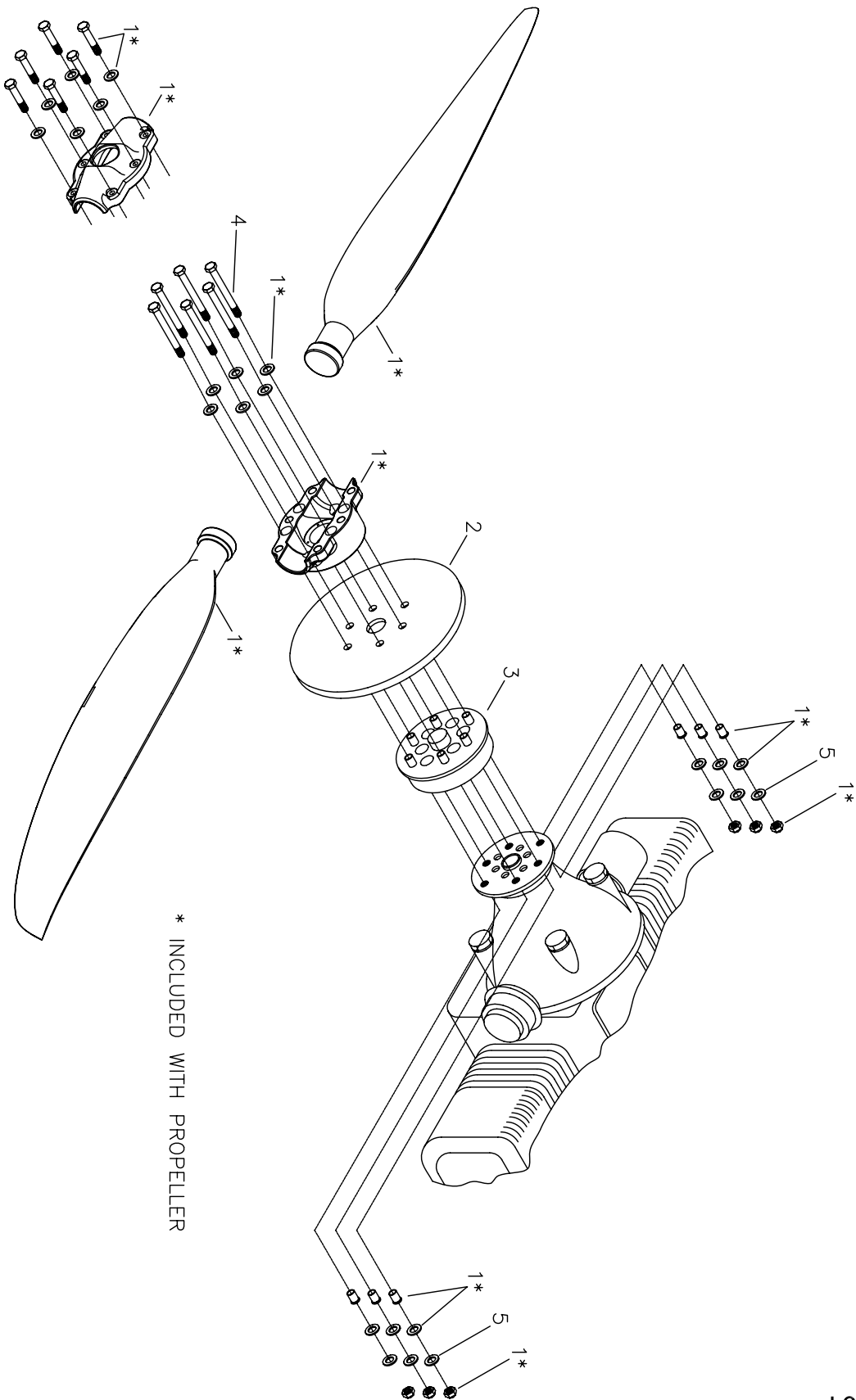
Sample Schematic

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Switch - Ignition * **	KSES0027	0
2.	Optional RANS S-19 Airspeed Indicator - 3-1/8" * **	KSAV0020	0
2.	Optional RANS S-19 Airspeed Indicator - 2-1/4" * **	KSAV0021	0
3.	14 Gauge Wire *	-----	0
4.	Breaker *	-----	0
5.	Hour Meter Relay Assembly	KAES0016	1
6.	3/16" Aluminum Rivet - Cherry Q	AAPQ-62	1

* Builder Supplied

** Optional - available from RANS Parts Dept

4/1/2011



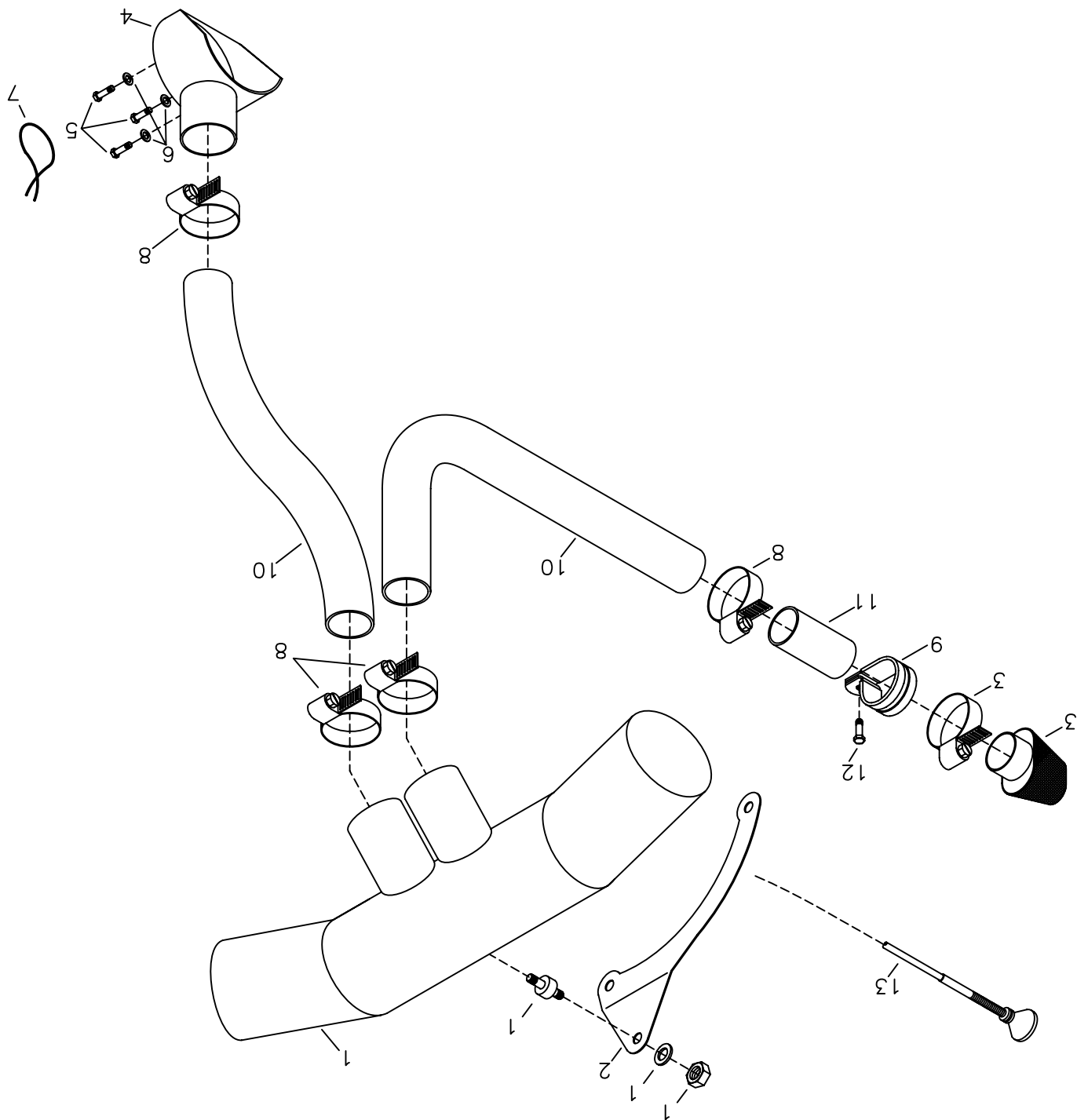
ROTAX S-19 VENTERA
ROTAX 912ULS
SENSENICH COMPOSITE PROPELLER INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Sensenich Composite Propeller Kit	KSPW0084	1
2.	Spinner Backing Plate - 912 *	KPPW0296	0
3.	1" Prop Extension - 912ULS Sensenich Composite Prop	KAPW0034	1
4.	5/16" Bolt	AN5-26A	6
5.	5/16" Thick Washer	AN960-516	6

* Referenced from Spinner Assembly.

RPM S-19 VENTURA ROTAX 912ULS OPTIONAL AIRBOX ASSEMBLY

MD5464



RANS S-19 VENTERRA - ROTAX 912ULS - Optional Airbox Assembly

PAGE 13I-02

RANS Part Assembly # KAPW0055 (with Airbox), KAPW0056 (without Airbox)

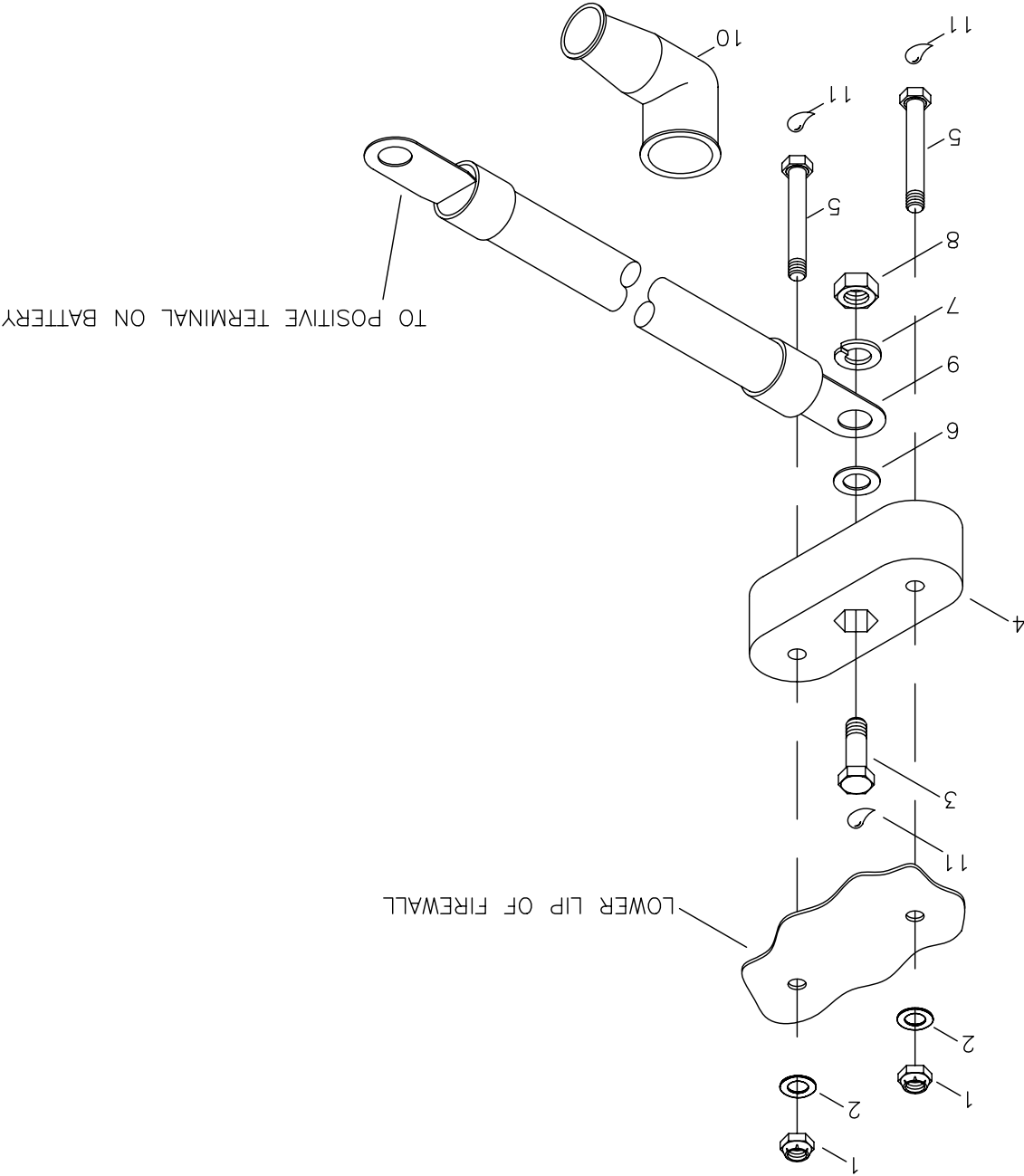
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Rotax Airbox Assembly	867 756	1
2.	Airbox Support Bracket	KPPW0264	1
3.	Air Filter	SN-2540	1
4.	Heat Exchanger	KPPW0263	1
5.	3/16" Bolt - Drilled Head	AN3H-4A	3
6.	1/4" Thick Washer	AN960-416	3
7.	Safety Wire *	-----	0
8.	Hose Clamp - 2 3/4"	5-5236	4
9.	2-1/2" Cushioned Clamp	MS21919-DG40	1
10.	2-1/2" Duct Hose	KSPW0087	5 ft.
11.	Intake Splice Tube	KPPW0281	1
12.	6MM Bolt	M6x20 BOLT	1
13.	Control Cable	4-336	1

* Builder Supplied

4/1/2011

OPTIONAL REMOTE CHARGING POST
ROTAX 912ULS
RPM S-19 VENTERA
INSTALLATION

MD5501



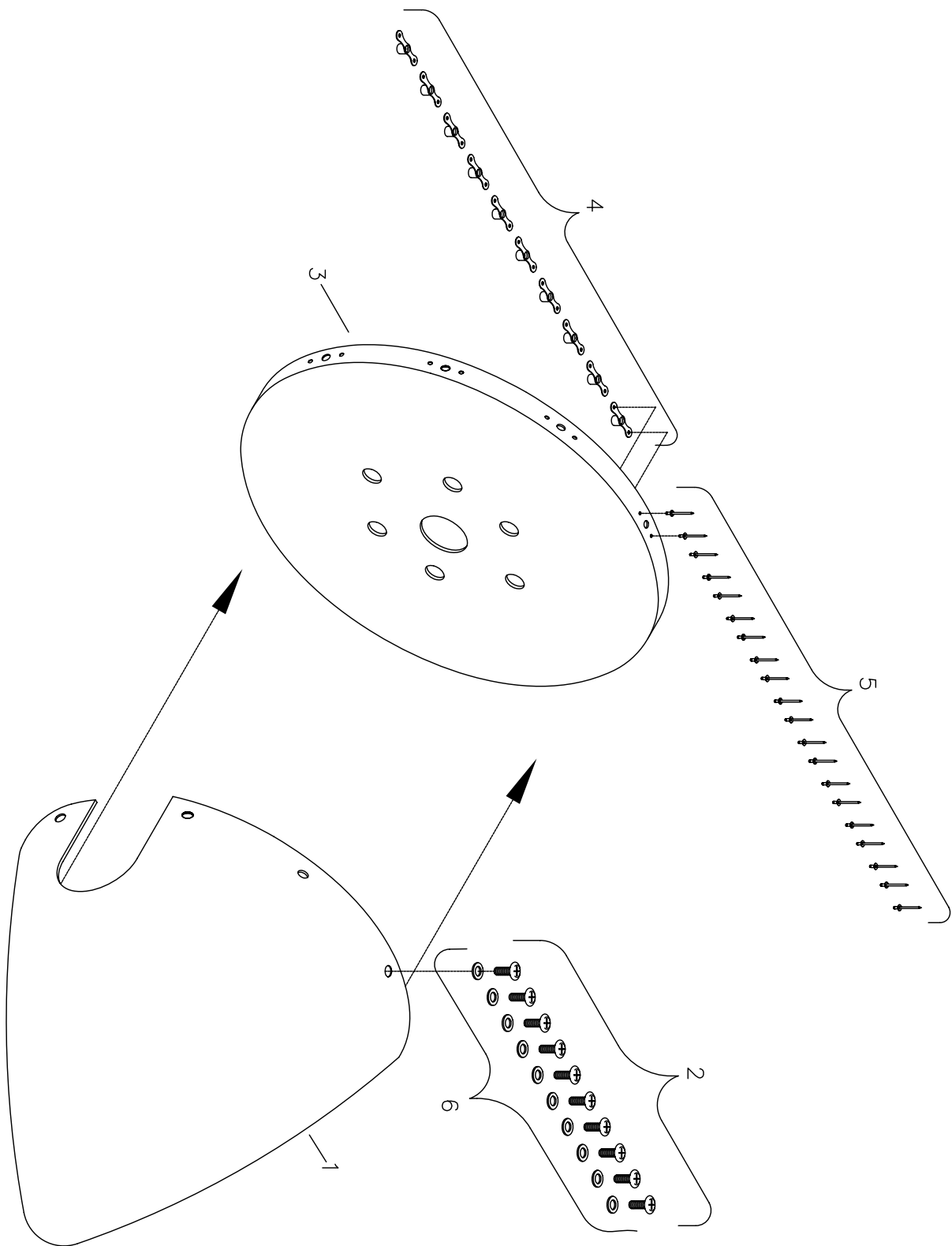
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Steel Shear Nut	AN364-1032C	2
2.	3/16" Thin Washer	AN960-10L	2
3.	1/4" Plain Bolt	1/4 X 1 BOLT	1
4.	Isolator Block	KPES0026	1
5.	3/16" Bolt	AN3-7A	2
6.	1/4" Thick Washer	AN960-416	1
7.	1/4" Lock Washer	AN935-416L	1
8.	1/4" Plain Nut	AN345-416	1
9.	Remote Battery Charger Cable	KAES0017	1
10.	Terminal Boot	MS25171-3S	1
11.	Silicone Seal *	-----	0

* Builder Supplied

4/1/2011

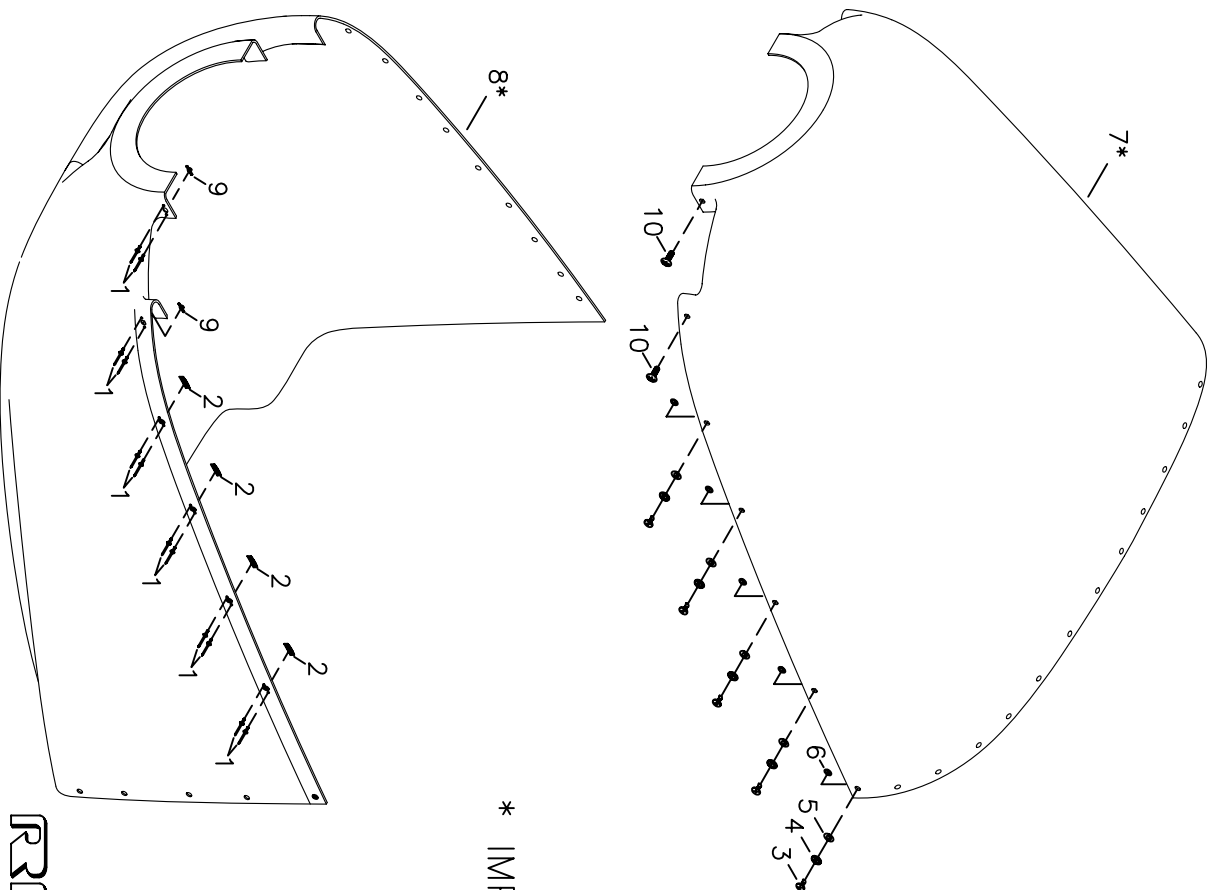
14 – SPINNER & COWLING INSTALLATION

ROTAX 912ULS - SPINNER ASSEMBLY	14-01 - 14-02
ROTAX 912ULS - COWLING ASSEMBLY & INSTALLATION	14A-01 - 14A-02
ROTAX 912ULS - OIL CHECK DOOR INSTALLATION	14A-03 - 14A-04
ROTAX 912ULS - OPTIONAL LANDING LIGHT INSTALLATION	14B-01 - 14B-02

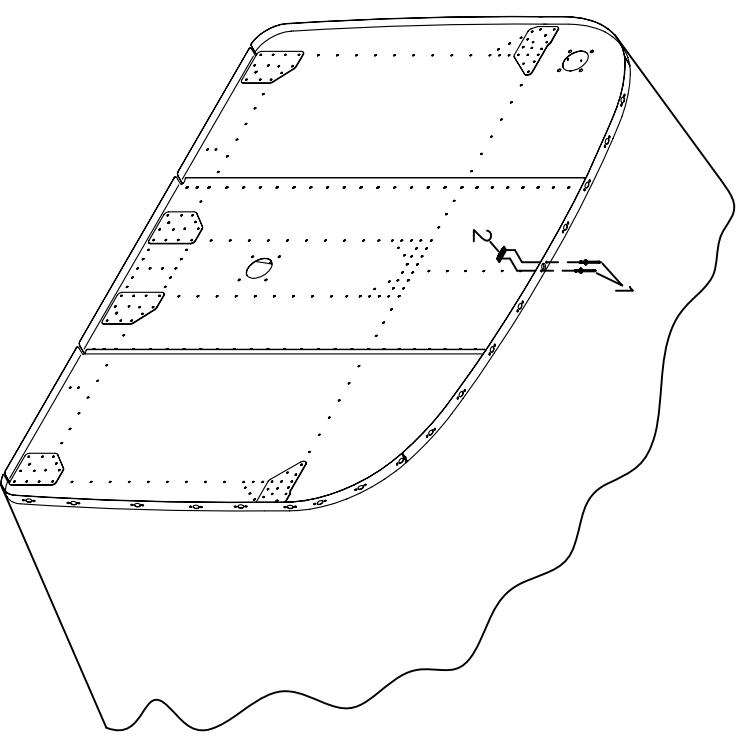


RFD S-19 VENTERRA
ROTAX 912ULS
SPINNER ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Spinner Dome - 11.3"	KSPW0095	1
2.	Pan Head Phillips Bolt	KSHW0071	10
3.	Spinner Backing Plate - 11.3" - 912	KPPW0296	1
4.	3/16" Nut Plate	K-1000-3	10
5.	3/32" Aluminum Rivet	40APR1/4	20
6.	3/16" Thin Washer	AN960-10L	10



* IMPORTANT: INSTALLATION OF COWLING
REQUIRES ENGINE, PROP EXTENSION
AND SPINNER BACKING PLATE TO BE
INSTALLED.



ROTAX S-19 VENTERRA **ROTAX 912ULS** **COWLING ASSEMBLY AND INSTALLATION**

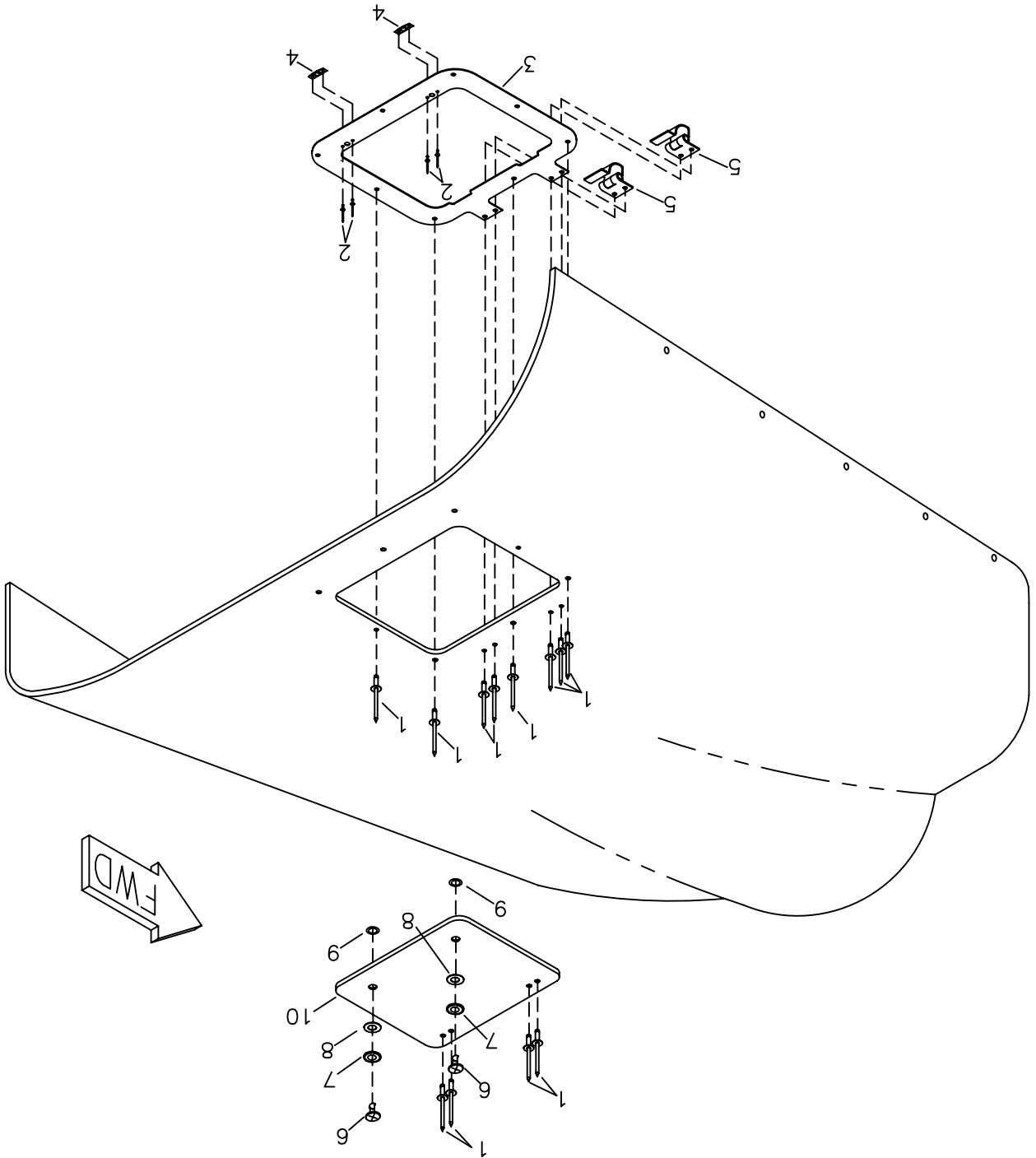
MD5141

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/32" Aluminum Rivet	40APR1/4	82
2.	1/4 Turn Receptacle	#302	37
3.	1/4 Turn Stud *	#240	4
3.	1/4 Turn Stud *	#200	4
3.	1/4 Turn Stud *	#180	37
4.	Rubber Washer	#201	37
5.	Wear Washer Nylon	#103	37
6.	Snap Ring	#101	37
7.	Upper Cowling	KPCW0040	1
8.	Lower Cowling	KPCW0041	1
9.	#8 Nut Plate	MS21047-08	4
10.	#8 Trusshead Screw	AN515-8R7	4

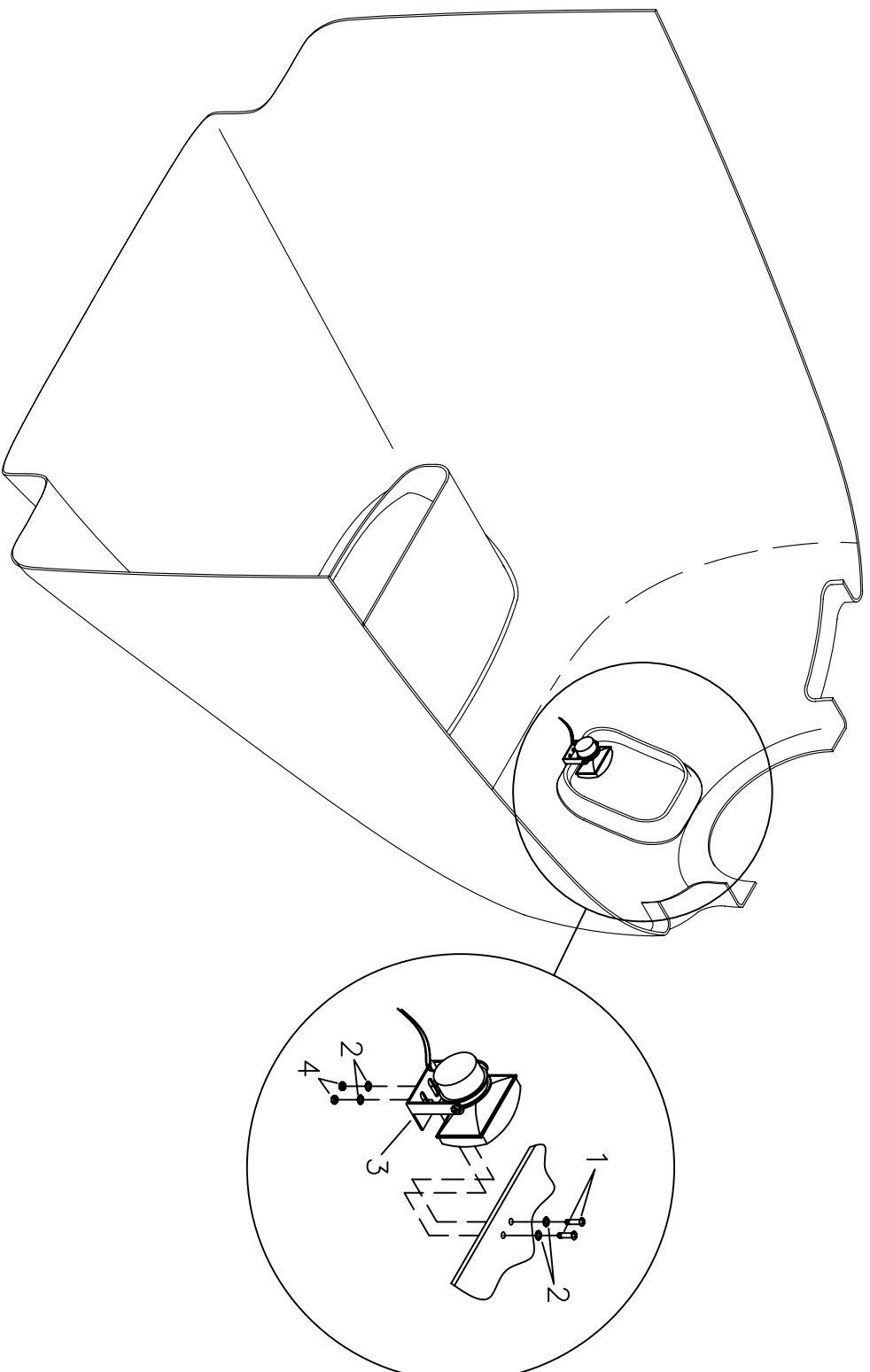
* Use as needed for secure attachment

RRR S-19 VENTERA ROTAX 912ULS OIL CHECK DOOR INSTALLATION

MD5140



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Rivet - Avex	1691-0410	18
2.	3/32" Aluminum Rivet	40APR1/4	4
3.	Reinforcement Ring - Maintenance Hatch	KPCW0015	1
4.	1/4 Turn Receptacle	#302	2
5.	Oil Door Hinge	KSHW0053	2
6.	1/4 Turn Stud	#180	2
7.	Rubber Washer	#201	2
8.	Wear Washer Nylon	#103	2
9.	Snap Ring	#101	2
10.	Maintenance Hatch	KPCW0036	1



ROTAX S-19 VENTERRA ROTAX 912ULS

OPTIONAL LANDING LIGHT INSTALLATION

MD5498

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	#8 Trusshead Screw	AN515-8R7	2
2.	#8 Brass Washer	AN960-B8	4
3.	Landing Light	KSES0068	1
4.	8-32 Shear Nut	AN364-832A	2