

# Minutes of Meeting

## Mitsubishi Small Engine Opportunity



**Date:** 2-5-13

**Time:** 9am-1pm

**Location:** Board Room  
Mankato

**Attendees:** MTU OE

- Mike Nuy (Purchasing Manager)
- Brittany Abraham (Purchasing Agent)
- Charlie Trier (Service Manager)
- Michael Danberry (Warranty Manager)
- Matt Bendlin (Parts Manager)
- Rauno Maaninen (Quality Manager)
- Justin Wilmes (Application Engineering Manager)
- Todd Phillips (Application Engineer)
- Chris Sturm (Electrical Engineer & Project Manager)
- Chris Shearman (Project Management)

Mitsubishi Engines North America (MENA)

- Ted Han (General Manager, Engine Sales)
- Samson Ayele (Manager Engineering / Service)
- Harold Kabel (Small Engine Sales Manager)

**Organizer:** Brandon Kraemer (Sr. Product Manager)

**Absent:** Mark Halbert (Director of Engineering)  
Alan Prosser (Director of Sales)  
Todd Riemann (CEO)  
Roger Hull (Purchasing Agent)

Action Items			
Item	Result / Action / Task	Who?	When?
1	Service / Support Information <ul style="list-style-type: none"> <li>• What way do we want to service units in the field?               <ul style="list-style-type: none"> <li>○ Best way is to attract large MTU distributors to be a self-servicing entity for “non-invasive” repairs of Mitsubishi engines used in MTU OE product.                   <ul style="list-style-type: none"> <li>▪ This would involve training, which MENA is willing to do at their facility or for a large enough group, at a customer location. TBD when opportunity arises.</li> </ul> </li> <li>○ Where MTU OE distributors do not want to invest in training &amp; costs associated (smaller distributors), 17 USA and Canadian distributors can handle this support of the engine, or large MTU distributors can be used.</li> <li>○ Latin American Mitsubishi distribution is being developed, but not as complete as USA/ Canada. Lacking support could be handled from</li> </ul> </li> </ul>	Info	---

# Minutes of Meeting

## Mitsubishi Small Engine Opportunity



	<p>distributor via factory.</p> <ul style="list-style-type: none"> <li>○ Mitsubishi distributor coverage is obviously less than current supplier</li> <li>• How do we want to service engines in house? <ul style="list-style-type: none"> <li>○ Immediate support would likely result in us pulling bad engine to replace with another from stock for invasive work. Non-invasive repairs would be handled by MTU OE Mankato factory trained personnel.</li> <li>○ Closest servicing distributor to Mankato is in Fargo, North Dakota.</li> </ul> </li> <li>• 4000-5000 small engines sold today in USA for gen-drive and light tower applications</li> <li>• 24/7 factory service support is available without extra charge</li> </ul>			
2	<p>Mileage compensation for warranty work?</p> <ul style="list-style-type: none"> <li>• Mileage rate is variable depending on distributor location.</li> <li>• To be agreed upon by MENA &amp; MTU OE prior to product SoS if MENA is selected</li> </ul>	Danberry Ayele	TBD	
3	<p>Send fluids &amp; lubrication manual showing recommended coolant, oil and fuel provisions for S4S engines to MTU</p> <ul style="list-style-type: none"> <li>• Up to 5% bio-fuel allowed for emergency standby use</li> </ul>	Ayele	Wk 7	Status unknown...
4	<p>Send recommended maintenance schedules to MTU</p> <ul style="list-style-type: none"> <li>• 250 hour oil changes recommended unless oil sampling done which allows extension to 500 hours</li> </ul>	Ayele	Wk 7	
5	<p>Send long term storage requirements to MTU</p> <ul style="list-style-type: none"> <li>• Not required until 18 months</li> </ul>	Ayele	Wk 7	
6	<p>Failure Rate Comparison</p> <ul style="list-style-type: none"> <li>• What is the large bore engine's failure rate compared to the small engines? (for comparison purposes)</li> <li>• Small bore engine failure rate: 0.1%</li> </ul>	Han / Ayele	Wk 7	
7	<p>Parts</p> <ul style="list-style-type: none"> <li>• Pricing of parts based on urgency for part</li> <li>• We would like to sell non-invasive parts to our distribution. <ul style="list-style-type: none"> <li>○ All engine parts are available to USA within one week, with exception of flywheel housing, crankshaft, and crankcase are not stocked so these take longer.</li> <li>○ 24/7 part support is available but charges apply for after-hours parts support</li> </ul> </li> </ul>	Info	---	

# Minutes of Meeting

## Mitsubishi Small Engine Opportunity



8	<p>Part Pricing</p> <ul style="list-style-type: none"> <li>MENA/MTU OE to review part pricing discounts if MENA is chosen as an engine supplier</li> </ul>	Danberry / Ayele	TBD
9	<p>Warranty</p> <ul style="list-style-type: none"> <li>Comparison of Terms <ul style="list-style-type: none"> <li>MTU standard product warranty: 2yrs/3000 hours</li> <li>MTU Verizon warranty: 5yrs/3000hrs</li> <li>MENA standard warranty: 2yrs/2000hrs</li> </ul> </li> <li>Comparison of Warranty start <ul style="list-style-type: none"> <li>MTU warranty starts at commissioning or at 12 months after MTU shipment</li> <li>MENA would like to start at commissioning, but past experience has shown MTU doesn't always receive notice of commissioning.</li> <li>Start of warranty will have to be negotiated if MENA is chose to be the engine supplier</li> </ul> </li> </ul>	Info	---
10	<p>Quote non-standard warranty terms</p> <ul style="list-style-type: none"> <li>3yrs/3000hrs</li> <li>5yrs/3000hrs</li> <li>Prime warranty?</li> </ul>	Kabel / Ayele / Danberry	Wk 7
11	<p>Execution of Warranty</p> <ul style="list-style-type: none"> <li>MENA makes initial decision on warrantable repairs, then reviews with MTU if necessary</li> </ul>	Info	---
12	<p>Swing Engines</p> <ul style="list-style-type: none"> <li>MENA will likely have small inventory of engines in house in the case of an urgent need of 1-2 engines, assuming the configuration is the same</li> </ul>	Info	---
13	<p>Quality Audit</p> <ul style="list-style-type: none"> <li>MTU would like to do quality audit if MENA is selected <ul style="list-style-type: none"> <li>MENA has requested a listed of items to be checked</li> <li>MENA has requested name of audit participants</li> </ul> </li> </ul>	Maaninen	TBD
14	<p>Failure Analysis</p> <ul style="list-style-type: none"> <li>Two month turn-around timeframe standard</li> <li>Two week turn-around timeframe cannot be guaranteed</li> </ul>	Info	---
15	<p>Purchasing Forecast</p> <ul style="list-style-type: none"> <li>12 month rolling forecast</li> <li>3 month frozen zone</li> </ul>	Info	---
16	<p>Engine Shipment</p> <ul style="list-style-type: none"> <li>Engines will come over in containers to Seattle port</li> <li>Pricing includes shipping costs to Seattle port, including removal from containers. Does not include US freight charge from Seattle.</li> <li>Our qty. doesn't justify Seattle warehousing with MENA</li> </ul>	Info	---

Waiting for MHI

# Minutes of Meeting

## Mitsubishi Small Engine Opportunity



17	Engine Quantity / Container <ul style="list-style-type: none"> <li>S4S engines: <ul style="list-style-type: none"> <li>48 engines / 40' container</li> <li>? engines / 20' container</li> </ul> </li> <li>S4Q2 engines: <ul style="list-style-type: none"> <li>56 engines / 40' container</li> <li>28 engines / 20' container</li> </ul> </li> <li>Confirm S4S qty in 20' container</li> </ul>	<del>Kabel</del>	<del>Wk 7</del>
18	S4S engine factory (Japan) Current Capacity <ul style="list-style-type: none"> <li>70% of full capacity is utilized</li> </ul>	Info	---
19	Terms of Payment <ul style="list-style-type: none"> <li>MTU requests terms of "Net 60"</li> <li>MENA to confirm or propose other options</li> </ul>	<del>Han / Kabel / Abraham</del>	<del>Wk 7</del>
20	Provide MTU a MENA contact list for the following areas <ul style="list-style-type: none"> <li>Engineering support</li> <li>Engine ordering (internal)</li> <li>Parts support</li> <li>Warranty Support</li> <li>Service support</li> </ul>	<del>Ayele / Kabel / Han</del>	<del>Wk 7</del>
21	Review technical data on portable drive & address missing information if necessary	<del>Phillips / Wilmes</del>	<del>Wk 7</del>
22	Engines are not single-side serviceable	Info	---
23	Review glow plug & block heater requirements for cold ambient starting (-20F)	Phillips / Ayele	TBD
24	Review max. fan pulley bending moment (for proper fan spacer & fan weight selection) if MENA is selected as a supplier	Ayele	TBD
25	Supply engine power tolerance for S4S engines	Ayele	Wk 7
26	Supply additional technical information required by MTU OE, as defined by list given by Mr. Todd Phillips	Ayele	Wk 7
27	50hz Engines will be same as 60hz engines, with mechanical screw adjustments to engine speed	Info	---
28	Provide price target for S4Q2 engine	<del>Abraham / Nuy / Kraemer</del>	<del>Wk 7</del>
29	Provide price targets & quantities for gas engine long blocks	Kraemer	Wk 10
30	Estimated dates of project <ul style="list-style-type: none"> <li>Needing prototype S4S NA engine (2-3 max): Aug. 2013</li> <li>Needing production S4S NA engine: Nov. 2013</li> </ul>	Info	---

Status unknown