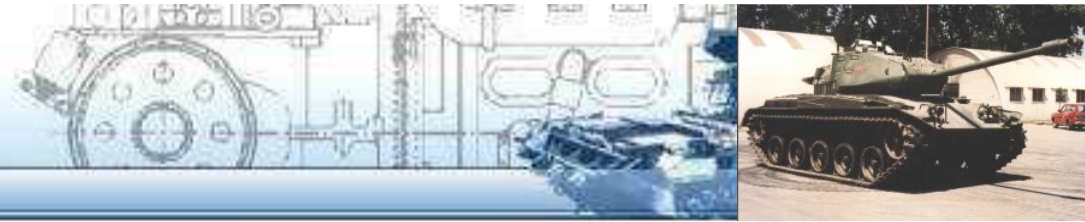


# M41 TANK - REPOWERING



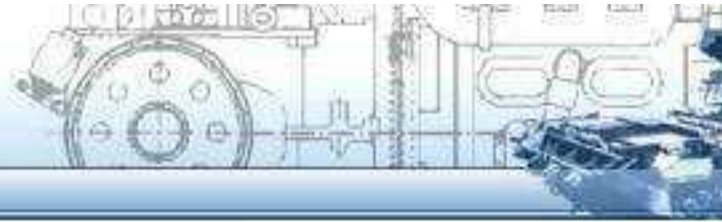


## **M41 REPOWERING**

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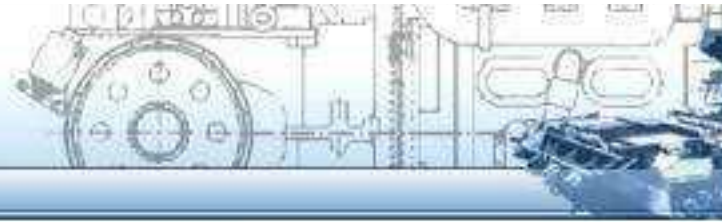
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## M41 REPOWERING LINE

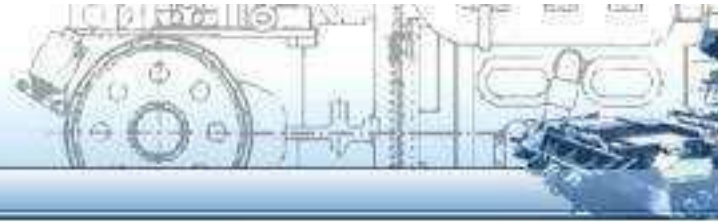






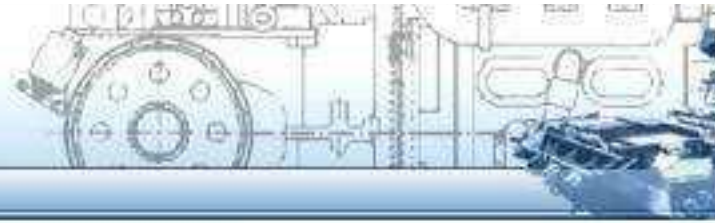
## REPOWERED M41 UNIT IN FIELD TRAINING





## M41 REPOWERING



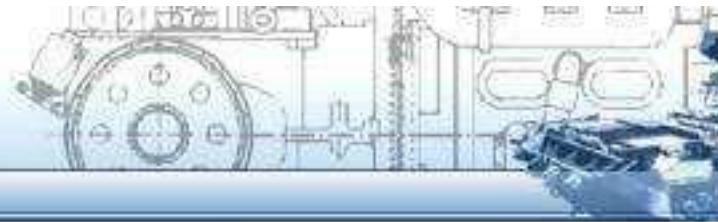


## M41 REPOWERING

### *DIESEL VS. GASOLINE FOR BATTLE TANKS*

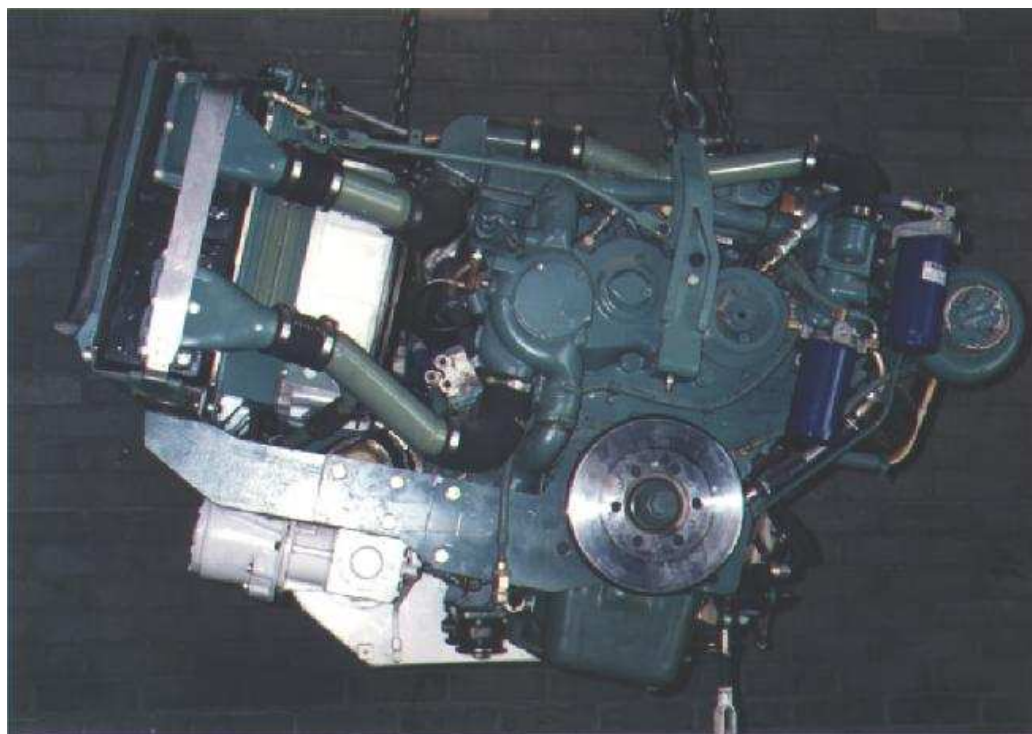
- Diesel fuel decreases dramatically the probability of fuel tank explosion and fire hazards, if the tank is hit or there is a major electrical failure igniting the fuel found in the fuel system.
- Diesel fuel has greater density and therefore more latent energy than gasoline (137,750 BTU/Gallon vs. 123,500 BTU/Gallon) and becomes much more efficient when engine is at idle
- No battle tanks are at present driven by gasoline engines; most are now powered by diesel.
- Last gasoline powered tanks were built in the 50s, and many of them have now diesel solutions developed by Nimda:
  - Sherman M4 ( 8V-71T engine )
  - M41 (8V-71T engine)
  - AMX13 (6V-53T engine)

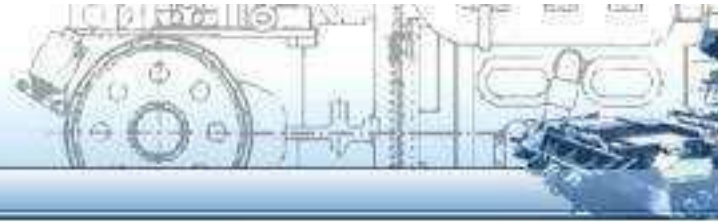




## M41 REPOWERING

### *NEW ASSEMBLED POWER-PACK*





## **M41 REPOWERING**

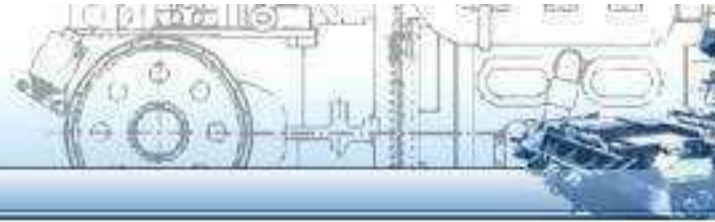
### ***APPROVING PROCEDURES REPOWERED M41 TANK***

**NIMDA'S REPOWERED M41 APPROVING PROCESS, UNDERGOING A TOTAL OF 4,000 KM. DRIVING TESTS IN SEVERE CLIMATES AND DIFFICULT TERRAINS.**

**These tough procedures had as purpose the checking of the re-powered M41 for:**

- Performance under extreme environment conditions**
- Functional operation**
- Field durability and reliability**
- Maintenance procedures at field up to depot levels**





## **M41 REPOWERING**

### **APPROVING PROCEDURES REPOWERED M41 TANK**

*The wide range of driving tests has also included:*

*cooling capability*

*max. speed  
and  
acceleration*

*max. speed  
on  
gradient*

*towing capability*

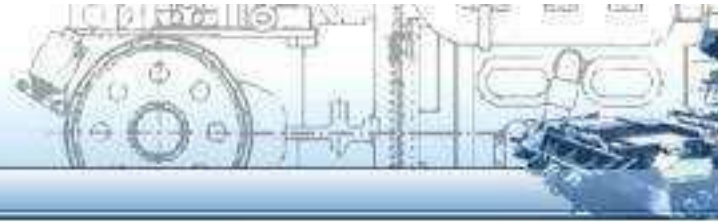
*side slope operation*

*operation in strong  
winds up to 80  
km/h*

*fording capability*

*climbing ability  
up to 60%*

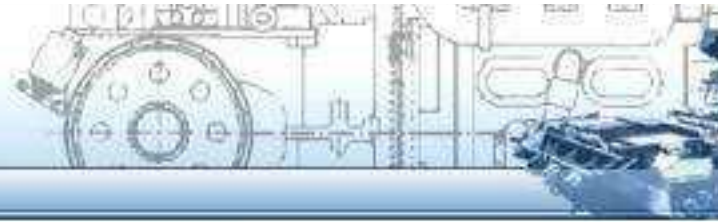
*operation on fields  
covered by high  
grass*



## NIMDA-REPOWERED M41 ON THE MOVE IN FLAT DRY GRASS ENVIRONMENT







## REPOWERED M41 UNDER FIELD TESTING

### TESTING INSTRUMENTATION

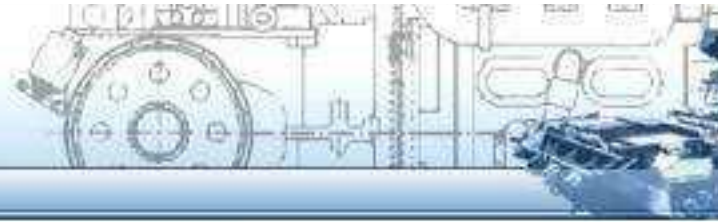


*VEHICLE EQUIPPED WITH  
TESTING  
INSTRUMENTATION*



*CLOSE LOOK AT THE  
THERMOCOUPLES  
READINGS*





## REPOWERED M41 UNDER FIELD TESTING

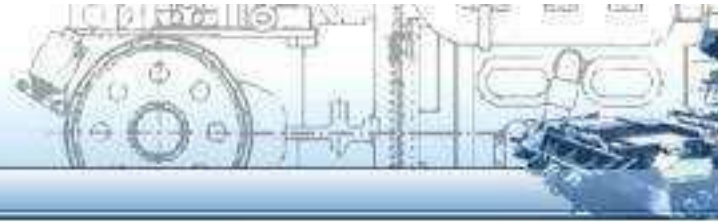
### *TESTING INSTRUMENTATION (cont'd)*



*AIR OUTLET STREAM INDICATORS*



*AIR OUTLET STREAM INDICATORS  
ON  
TANK IN MOVEMENT*



## **REPOWERED M41 UNDER FIELD TESTING**

### ***POWERPACK TESTING***

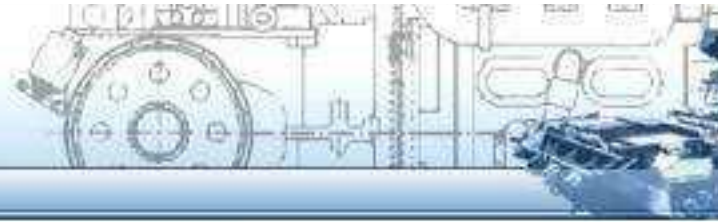


***POWERPACK AFTER TESTING***



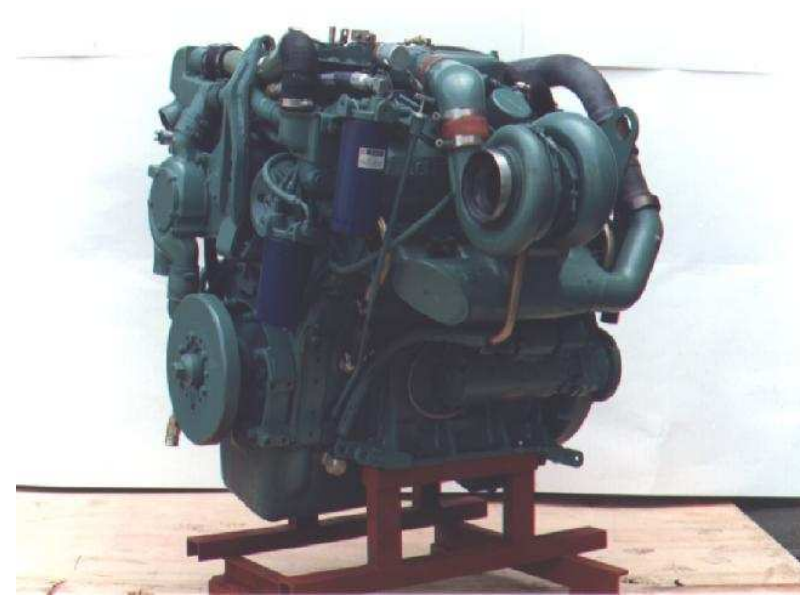
***ENGINE COMPARTMENT AFTER TESTING***



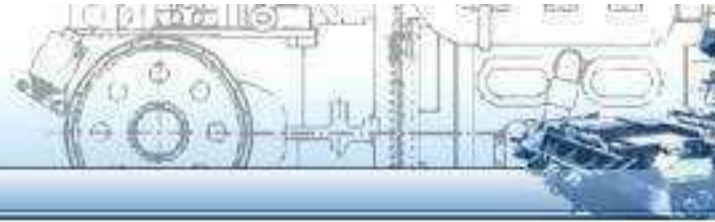


## REPOWERED M41 INTEGRATION

### NEW ENGINE



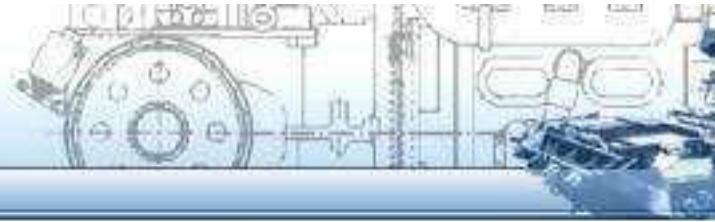




## M41 REPOWERING

### NEW ENGINE CHARACTERISTICS CHART

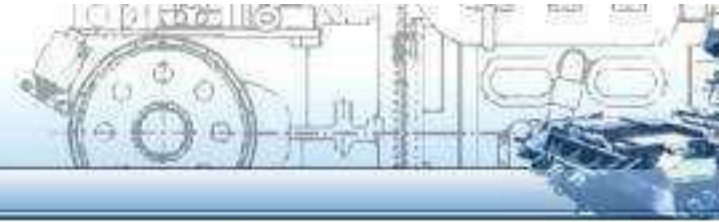
<b>QUICK RESPONSE</b>	<b>FAST ACCELERATION</b>	<b>VIBRATION-FREE OPERATION</b>
<b>EASY STARTING</b>	<b>COMPACT &amp; LIGHT WEIGHT</b>	<b>GOOD AT HIGH ALTITUDE</b>
<b>GOOD FUEL ECONOMY</b>	<b>EXCELLENT RELIABILITY</b>	<b>400 HRS "NATO" TEST</b>
	<b>GOOD DURABILITY</b>	
	<b>EASY MAINTENANCE</b>	
	<b>LOW LIFE CYCLE COST</b>	



## M41 REPOWERING

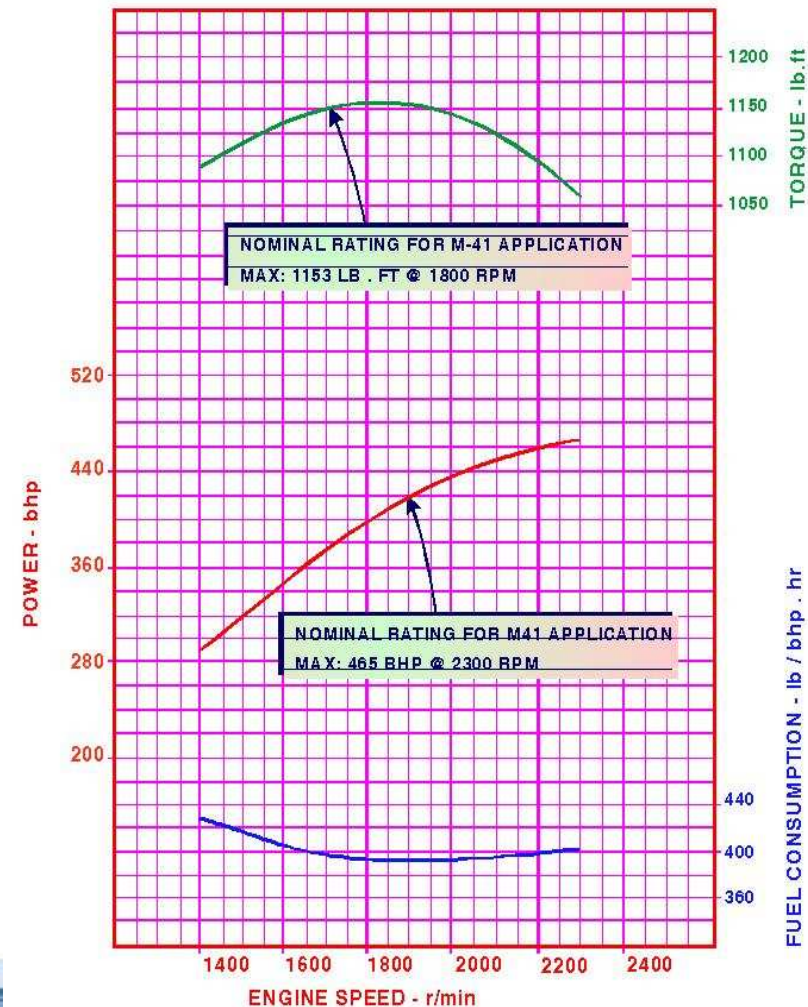
### ENGINES COMPARISON CHART

Characteristic	Original Engine	New Engine
<i>Model</i>	<i>AOS-895-3</i>	<i>8V T (Turbocharged)</i>
<i>Manufacturer</i>	<i>Teledyne Continental Motors</i>	<i>Detroit Diesel Corporation</i>
<i>Fuel Type</i>	<i>Gasoline</i>	<i>Diesel</i>
<i>Cooling Type</i>	<i>Air Cooling</i>	<i>Water Cooling</i>
<i>Power</i>	<i>500 HP @ 2,800 RPM</i>	<i>460 HP @ 2,300 RPM</i>
<i>Torque</i>	<i>975 lb.ft. @ 2,250 RPM</i>	<i>1,153 lb.ft. @ 1,800 RPM</i>
<i>Compression Ratio</i>	<i>5.5 : 1</i>	<i>17.0 : 1</i>
<i>Maximum RPM @ Full Load</i>	<i>2,800 RPM</i>	<i>2,300 RPM</i>
<i>Weight ( Dry )</i>	<i>1,899 lb.</i>	<i>1,900 lb.</i>



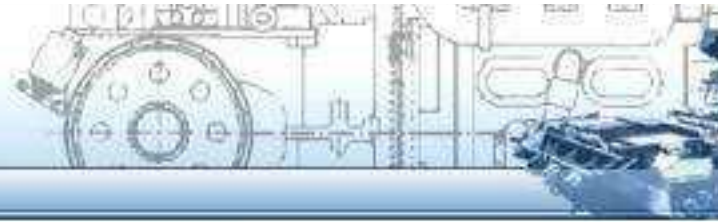
## M41 TANK REPOWERING

### ENGINE NOMINAL PERFORMANCE CURVE



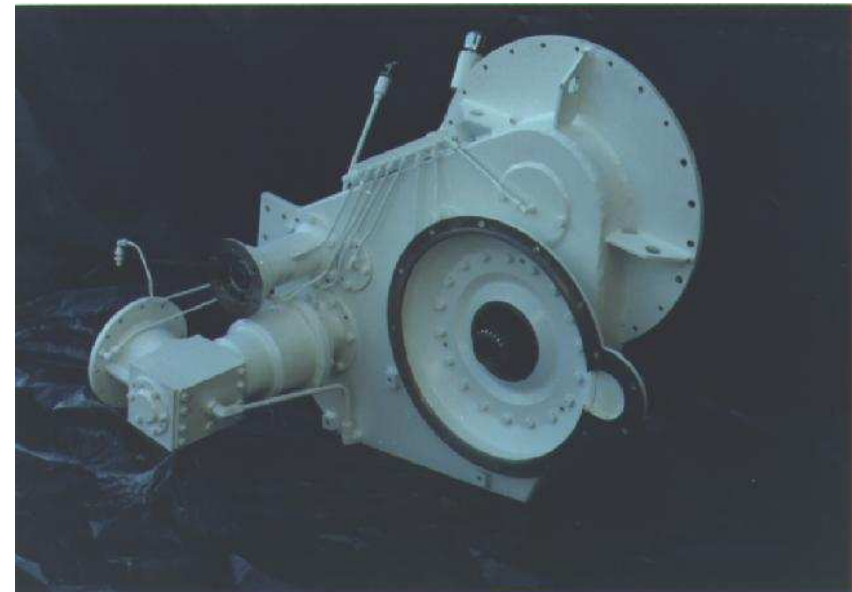
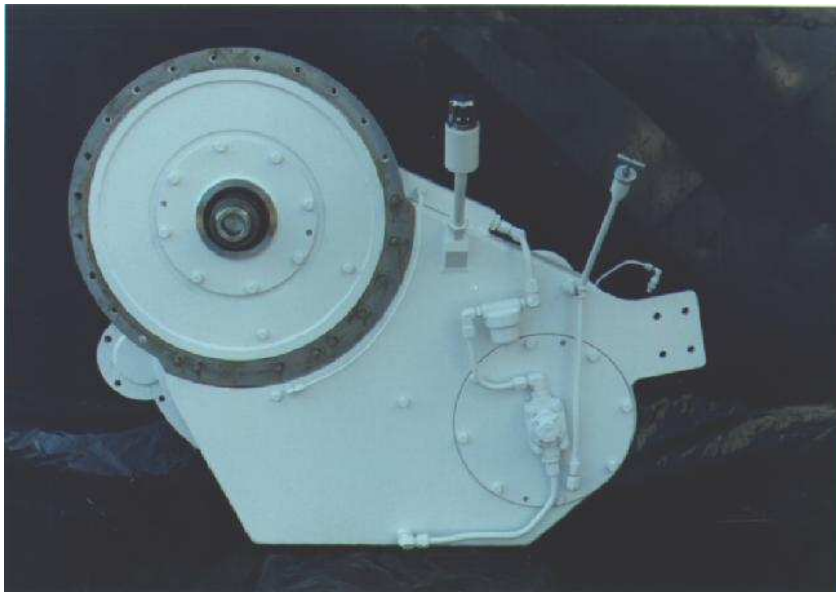
Note: Engine Rating might be slightly modified per latest engine production characteristics.

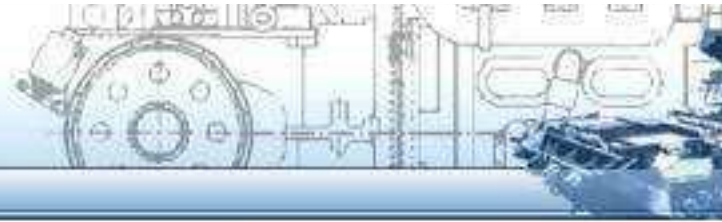




## REPOWERED M41 INTEGRATION

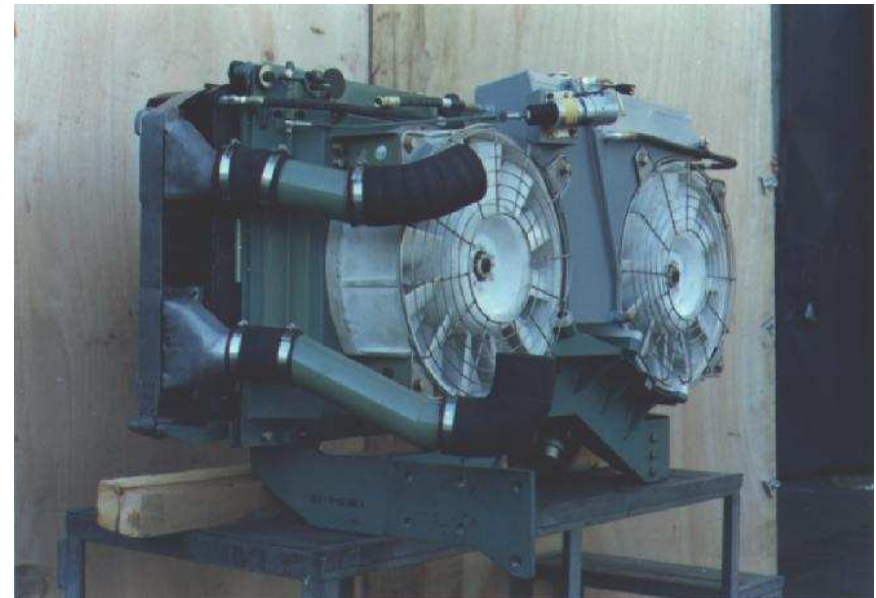
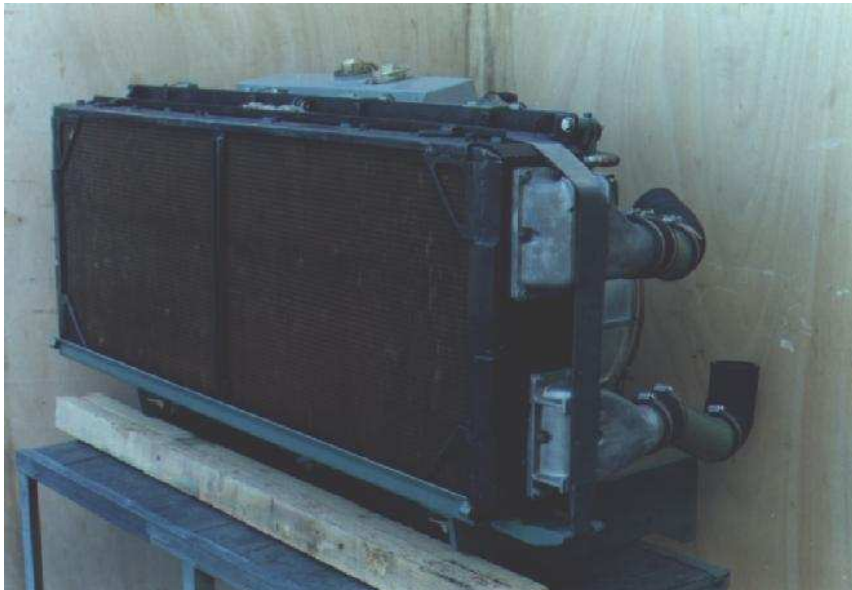
### STEP - UP TRANSFER GEAR

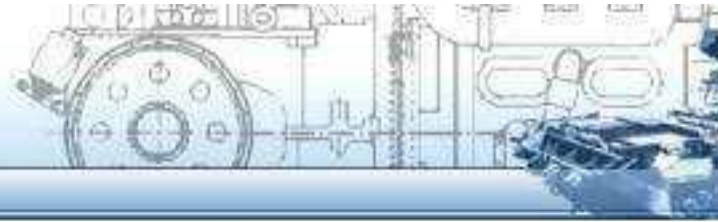




## REPOWERED M41 INTEGRATION

### *NEW COOLING SYSTEM*





## **REPOWERED M41 INTEGRATION**

### ***POWERPACK MOUNTS***

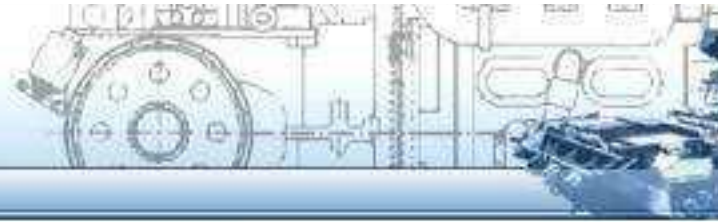


***THE POWERPACK FRONT  
MOUNTS - LEFT SIDE***



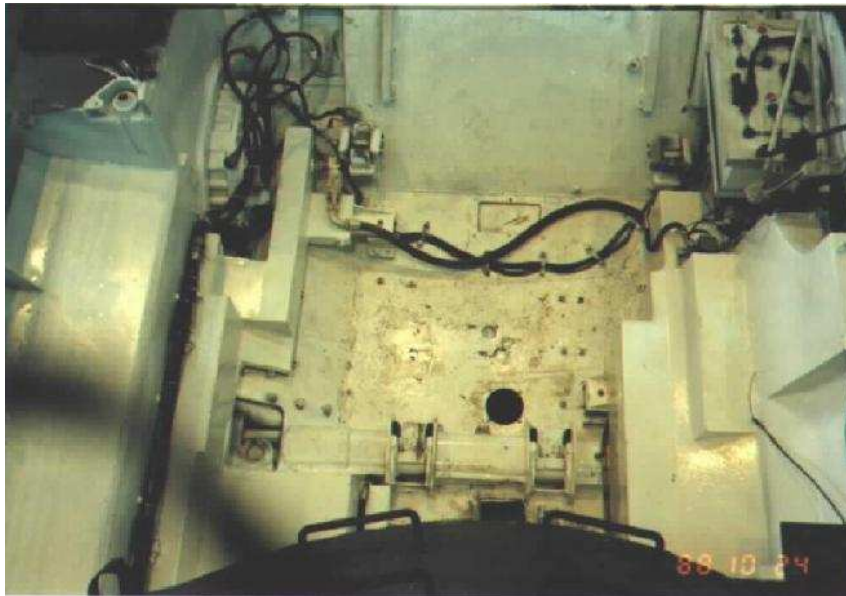
***THE POWERPACK FRONT  
MOUNTS - RIGHT SIDE***

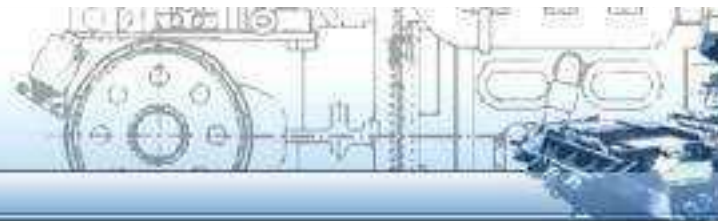




## REPOWERED M41 INTEGRATION

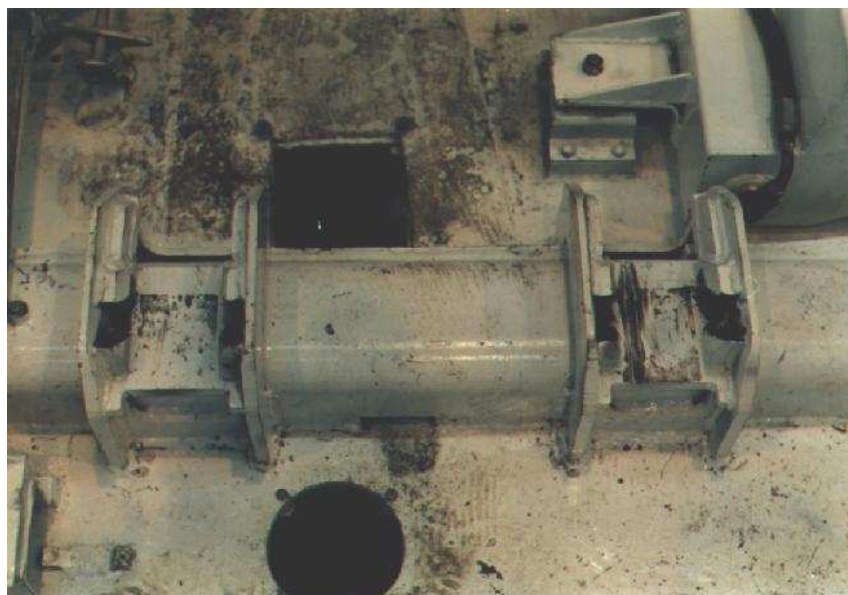
### *MODIFIED POWERPACK COMPARTMENT*





## REPOWERED M41 INTEGRATION

### *HULL MODIFICATION KIT INSTALLATION*

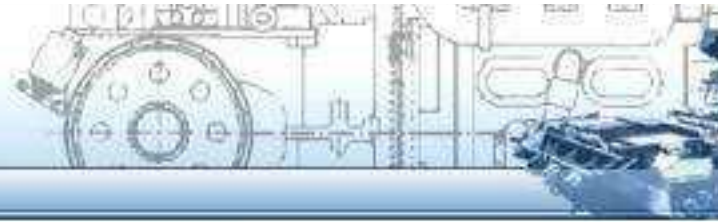


*POWERPACK FRONT SUPPORTS*



*POWERPACK FRONT SUPPORT CLOSE - UP*





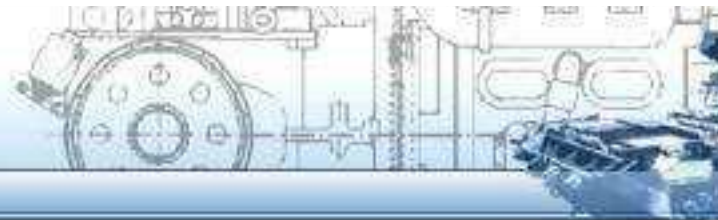
## REPOWERED M41 INTEGRATION

### *COMPONENTS PRODUCTION*



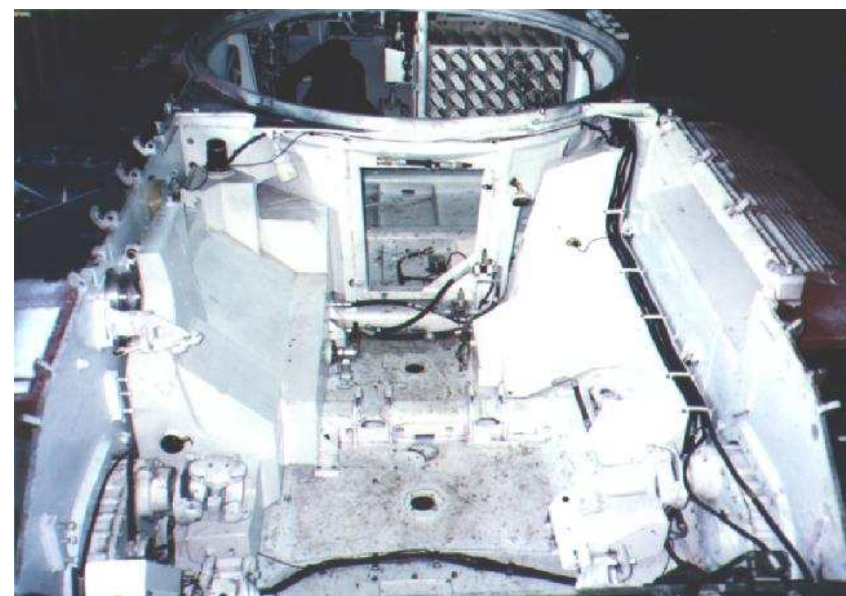
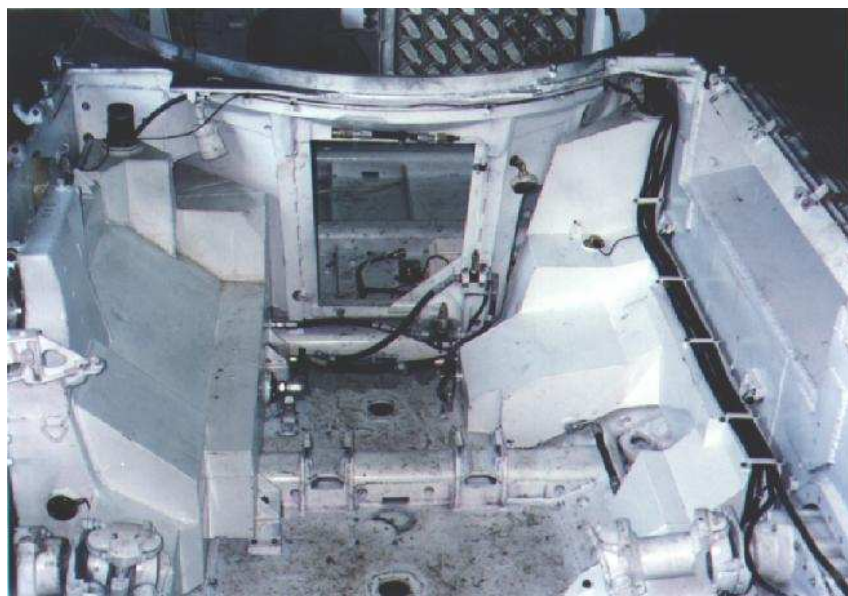
### *RIGHT FUEL TANK PRODUCTION*

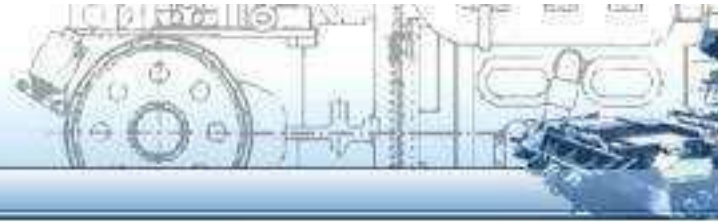




## REPOWERED M41 INTEGRATION

### FUEL SYSTEM INSTALLATION IN THE POWERPACK COMPARTMENT





## REPOWERED M41 INTEGRATION

### AIR INTAKE SYSTEM

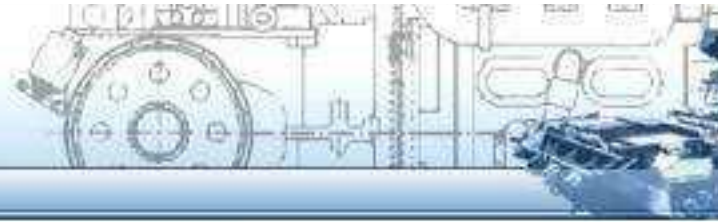


*FENDER - MOUNTED AIR CLEANER*



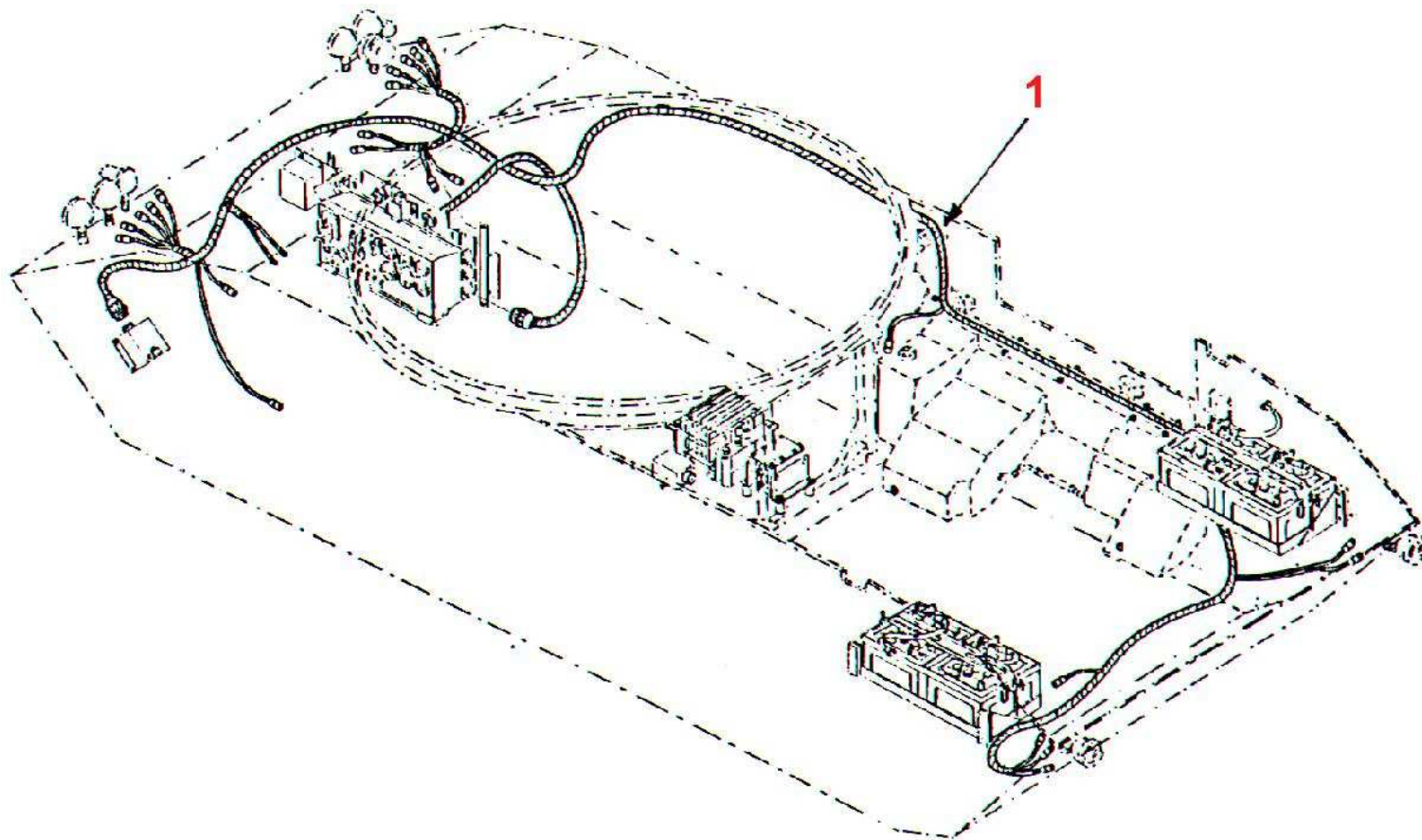
*AIR CLEANER*



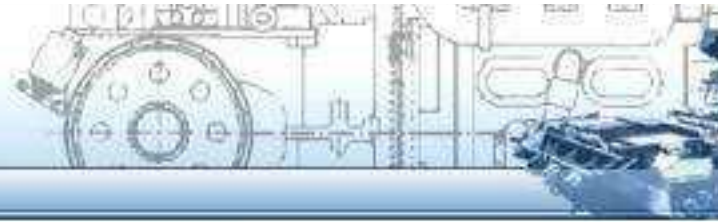


## REPOWERED M41 INTEGRATION

### ELECTRICAL HULL HARNESS-GENERAL LAYOUT

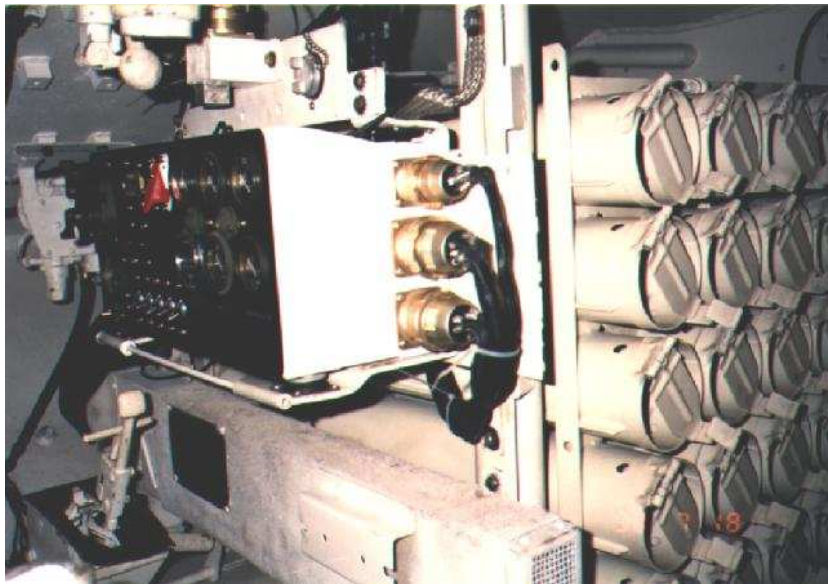




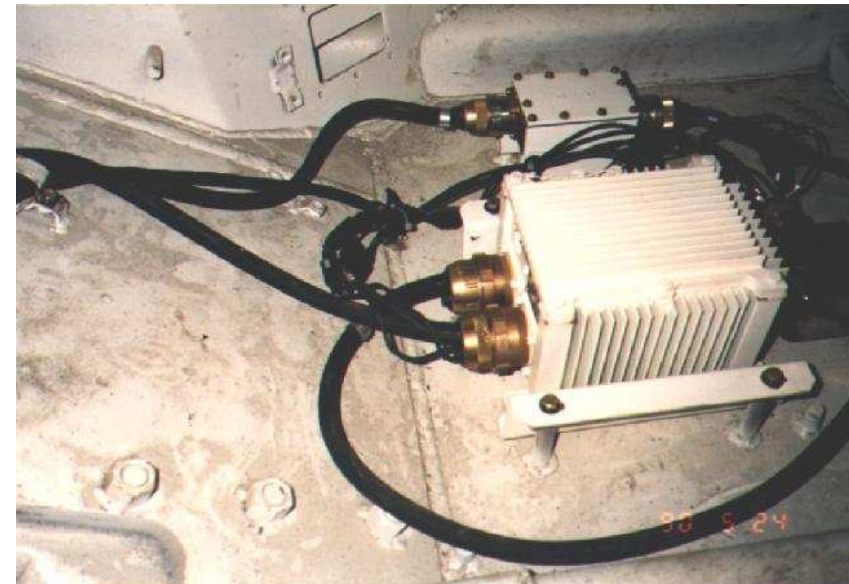


## REPOWERED M41 INTEGRATION

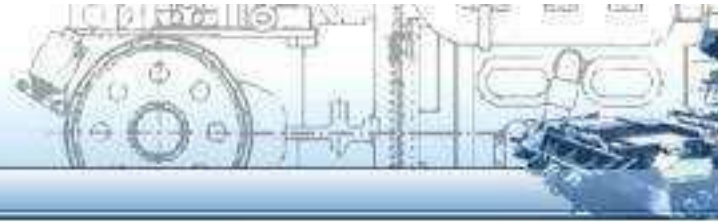
### *ELECTRICAL SYSTEM*



*DRIVER'S PANEL*



*ELECTRICAL HARNESS AND COMPONENTS*



## REPOWERED M41 INTEGRATION

### *HULL MAIN INSTALLATION LINE*

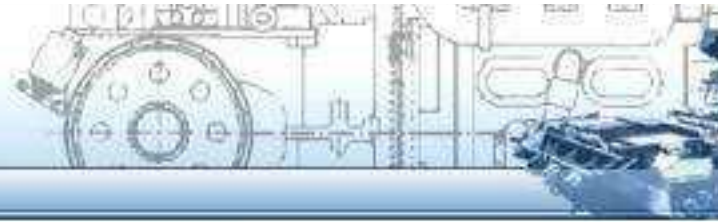


*M41 POWERPACK INSTALLATION*



*M41 HULLS READY FOR REASSEMBLING*





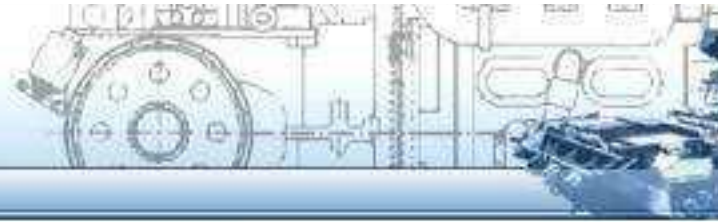
## REPOWERED M41 INTEGRATION

*NEW MODIFIED TOP DECK AND GRILLE*



*MODIFIED TOP DECK AND  
GRILLES - REAR VIEW*

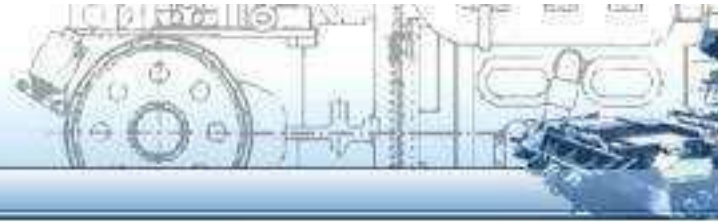




## REPOWERED M41 INTEGRATION

### TANKS AFTER THE PRODUCTION LINE

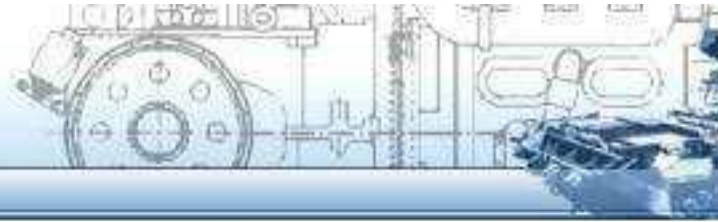




## REPOWERED M41 INTEGRATION

### *MODIFIED TANK'S GENERAL VIEW*





# The End

**Nimda Group**

Lev Pesach St.,  
North Industrial Zone  
P.O.B 768  
Lod, Israel 71106  
Tel: 972-8-9781121  
Fax: 972-8-9781137  
Mail: [info@nimda.co.il](mailto:info@nimda.co.il)  
Web: [www.nimda.co.il](http://www.nimda.co.il)