NIMDA

Power in Motion









Nimda - Diesel Head Office, Lod, Israel



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Company Profile

"Nimda - Diesel Group" - with its headquarter based in Israel and branches in the USA and the Czech Republic. The group's main business is development and manufacturing of powerpacks and powertrains for commercial and military vehicles.

Nimda Co. Ltd engages in the design, manufacturing, marketing and servicing of world class powerpacks for armoured fighting vehicles. Over the years the group has accumulated extensive know-how and experience with its products used by customers all around the world.

Israel Defense Forces (IDF) has been a major customer of the group for many years. As such the IDF provides Nimda the testing field and user evaluation. The IDF is using the group's products enhancing its developments for new proven technologies.

One of Nimda's main project was in the Czech Republic for the supply of new modern powerpacks, modernizing the T-72 tanks for the Czech MOD as well as T-72 recovery tanks, teaming-up with Perkins Engines and Allison Transmission.
Nimda was also chosen by IDF to develop and supply the powerpacks for the Achzarit Heavy APC projects and currently is working on the supply of the improved powerpacks.

Nimda International activities: Nimda has a global marketing operation engaged in turn-key projects and upgrading of Automotive systems for armoured fighting vehicles of many defense forces around the globe. In addition Nimda International represents "IMI – Israel Military Industries", and "IAI - Israel Aircraft Industries" in some specific markets.

Nimda is Backed by ISO 9001:2008 certification quality management system.

Nimda's modernized Tanks and APC's
The new versions



T - 72 - M4 MBT



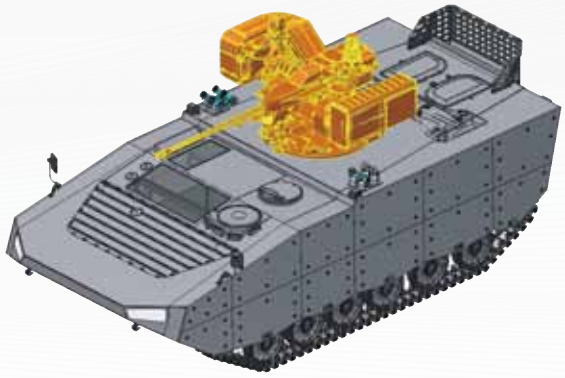
T - 72 - M4 - Recovery



Achzarit - II - HAPC



M - 113 - A3 (N-2000) APC



BMP - II - N2000 APC



Shilka – ZSU 23-4

Departments

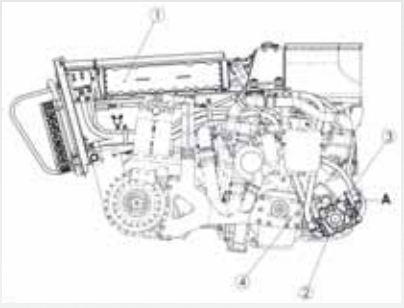
Engineering

Nimda Co.'s engineering department includes a highly skilled, professional engineering team. Nimda's engineers are desiging and manufacturing according to customer requiremens for a vast number of applications of Main Battle Tanks powertrains, including their control systems.

The department's working methood is based on:



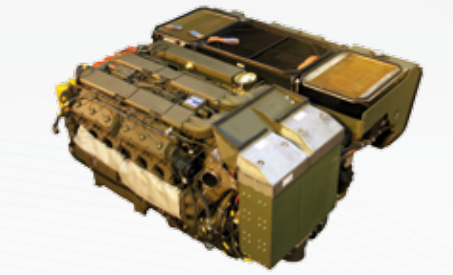
1. Design I - CAD



2. Design II



3. Engineering concept



4. Development



5. Upgrading line



6. Transfer Of Technology TOT

The group’s engineering department is located in Israel and in the Czech Republic and equipped with state-of-art engineering programs, simulation and testing equipment.





Testing on Nimda Engineering’s own dynamometer

Manufacturing

Nimda's manufacturing department includes a highly trained and long-term experienced workforce which has extensive knowledge in manufacturing prototypes and serial production. The manufacturing team is supported and supervised by our engineering department and all the production works according to the highest standards such as ISO 9000.







Marketing



The marketing department is headed by an (ret.) IDF officer with extensive experience in the "land vehicles" arena. The marketing department has a long-term connection with the Israeli Army (IDF) as Nimda has been an IDF supplier for many years - mainly in the Achzarit project and other AFV's projects. The department operates all over the world presenting and promoting the company's products.

Nimda also represents several leading Israeli defense companies in specific markets.

Nimda group also participates in major defense exhibitions all over the world (see below).



AUSA, USA



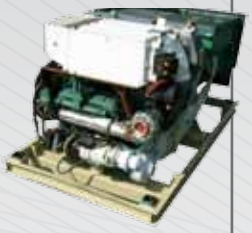
IDET, Czech Republic



Defense & Security, Thailand

Some of Nimda's AFV and their Powerpacks





Achzarit





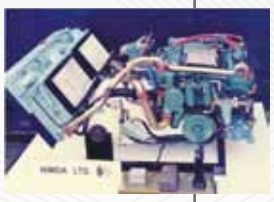
T-72



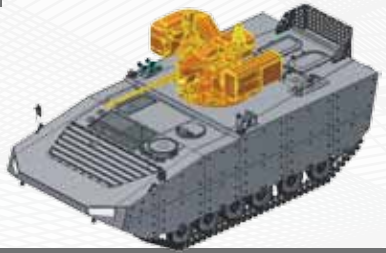


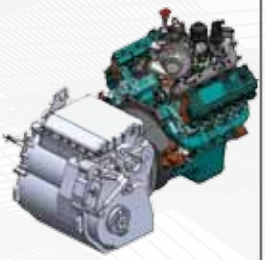
M-113-A3 (N2000)





T-55





BMP-II





M-60

NIMDA

Projects





Heavy Armoured Personnel Carrier (HAPC)

The low-silhouette 44 metric ton Heavy Armoured Personnel Carrier (HAPC) “Achzarit” was built on the chassis of the T-55 tank hull. The T-55 hull was modified, upgraded and re-engineered in order to contain a powerful Nimda designed powerpack rated at 710HP using DDC 8V92TA engine and with Allison automatic transmission XTG 411-5A including all other systems required for operating and controlling the powerpack unit.

The “Achzarit” HAPC is also equipped with the following weapon and auxiliary systems:

- Add-on armour
- Remote Control Weapon Station (RCWS)
- Driver’s night periscope
- Suspension system
- Fully automatic transmission (optional)
- Exhaust smoke screen



During the developing process the Achzarit was tested and approved by the Israel Defense Forces (IDF) testing unit.

Together with the IDF, Nimda has developed the unique “Israeli Achzarit model” which has become an extremely survivable APC.



New powerpack with 710 HP



Nimda new integral air cleaner



DDC 8V92TA engine



Allison XTG-411-5 transmission

T-72 Tank

Nimda, as team leader, participated in the modernizing and upgrading of the T-72M4 CZ tank in the Czech Republic. In this project many of the tanks' systems were improved by the development of the joint venture between Nimda, Finmeccanica - Selex Galileo of Italy and VOP 25 from the Czech Republic.



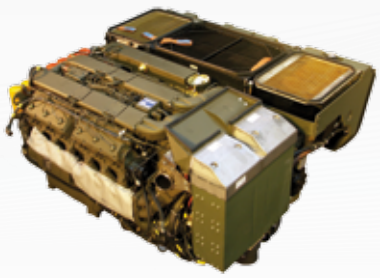


New powerapck by Nimda

The new powerpack's advantages are: More power (1000 HP against 780 HP in the old T-72), almost half the acceleration time from rest to 32 km/h, substantially increased mobility and maneuvering capability on rough terrain, elimination of human factor mistakes, higher reliability and durability, lower vehicle downtime, easier maintenance and improved performance in extreme ambient temperatures.



Perkins engine - Condor CV 12



New powerpack with 1000 HP



Allison Transmission XTG-411-6N series. Manufactured by Nimda in CZ.







Selex Galileo Fire Control System

T-72– Recovery Tank

Nimda has also led the upgrading of the T-72 Recovery tank of the CZ MOD which operates with the new powerpack – the combination of Perkins Condor engine and Allison XTG411-6N transmission. In addition to the powerpack, the modernization included: Driver's control equipment and instrument panel, diagnostics and navigation, monitoring equipment, cameras, camouflage, external & internal connections.



Nimda as part of a joint defense industrial team has upgraded and modernized the T-72 to participate in today's battlefield with its modern requirements. All of its old systems were replaced or upgraded, among them the following systems:

- Powerpack
- Fire Control system
- Diagnostic system
- Smoke system
- Protective camouflage system
- Ammunition
- Active armour
- Communication system
- Fire extinguishing system
- Navigation system
- Laser detector system
- Driver's night sight device

M-113 A3 (N-2000)

Nimda has upgraded the existing M-113 A1 or A2 APCs and many of its systems, and is proud to present the new upgraded M-113 A3 (N-2000).

The new M-113 A3 (N-2000) has a modern powerpack, which integrates between Detroit Diesel 6V53T 300HP engine and the Allison 3000 series automatic transmission. The Allison automatic transmission is fully electronic and has multiple commercial uses worldwide.

In addition to the new powerpack many other M-113 systems were improved among others: engine braking system, cooling system, transfer case, drive shafts, final drives, suspension system, shock absorbers, torsion bars and driver's controls.

All those improvements made it possible for the M-113 A3 (N-2000) platform to be able to carry extra weight for add-on armour. In this upgrading Nimda is offering "RAFAEL" add-on armour applications. Remote Controlled Weapon Station (RCWS) is also an option.





DDC 6V53T engine



M-113 A3 (N-2000) powerpack



Allison transmission 3000 series



Nimda cooling system



Nimda air intake system



RAFAEL RCWS – Remote Control Weapon Station

Shilka – ZSU 23-4

Nimda's new upgrading program for the ZSU 23-4 – Shilka vehicle systems includes:

- New engine
- Cooling system
- APU engine
- Air conditioning system
- Anti Nuclear-Biological-Chemical system
- Driver's day/night vision
- Optional: Air Defense Command and Control, Communication and Information system – ADC^{3}I

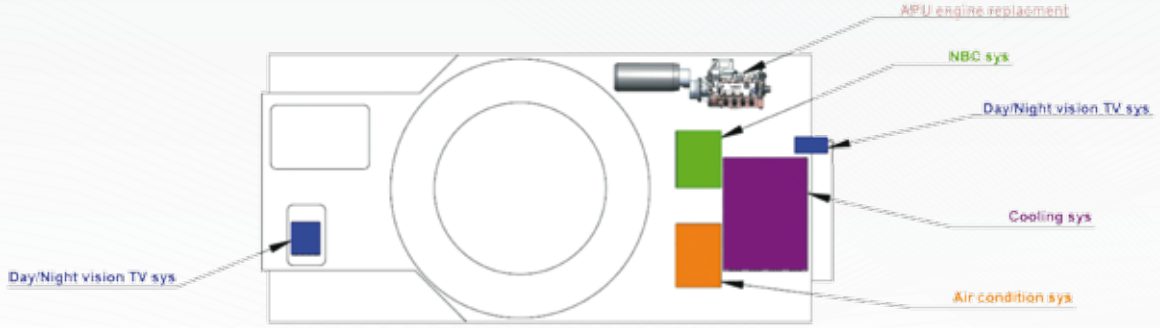


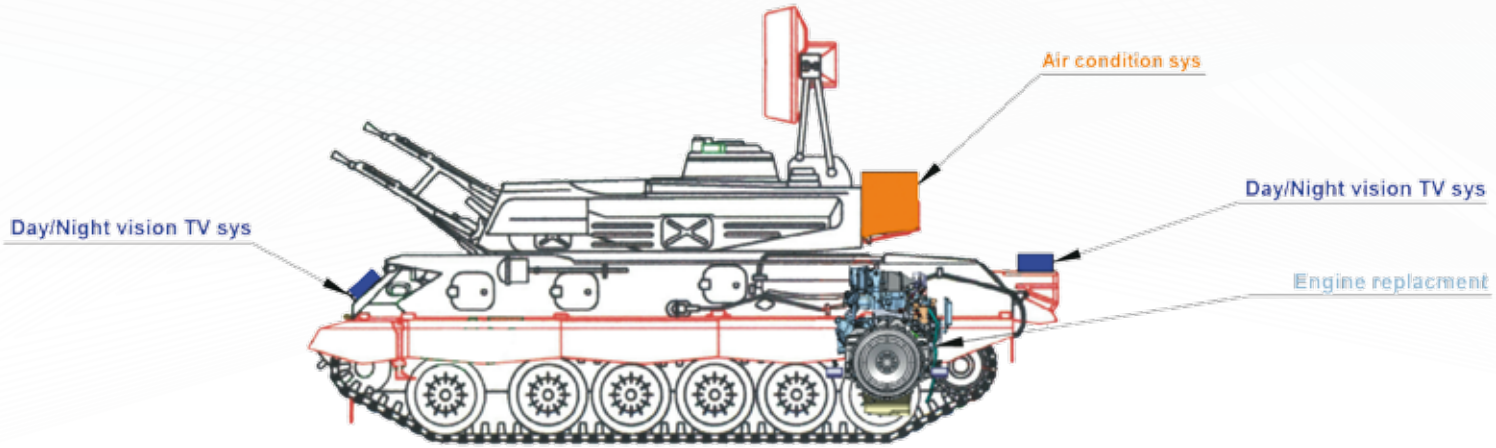






Driver's day/night vision

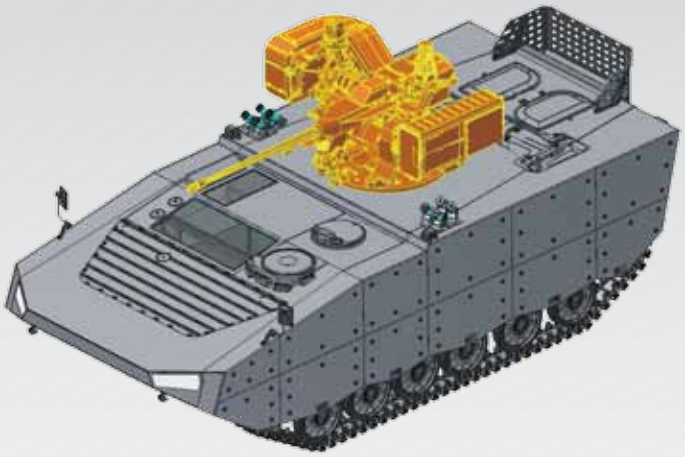




BMP-II

Nimda presents a re-powering program for the BMP-II with a new power unit including automatic transmission, improved mobility and reliability.

- Engine: MaxxForce 7 , 6.48V
- Transmission: Allison X200
- Optional: Weapon station





BMP-II new powerpack



Weapon station

BTR-50 and PT-76

Nimda has carried out a program to westernize and modernize BTR-2000 amphibious armoured personnel carrier and PT-76 amphibious light tank. The program provides new weapon station such as a new 90mm gun, a new powerpack, night vision and an automatic fire extinguishing system. The upgrade program includes also:

- New Detroit Diesel engine
- New added machine gun stations for the BTR-50
- Mobility improvement
- Reliability improvement
- New 90mm gun
- New F.C.S and T.C.S



BTR-50



DDC 6V92T power unit



PT-76

T-55

Nimda's T-55 modernized program includes:

- New improved powerpack
- Upgrade 105mm gun
- Upgraded day and night fire control system
- Upgraded add-on reactive armour
- Complete upgrade for all western systems





T-55 powerpack

M-41

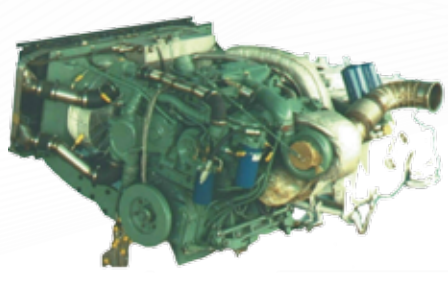
Nimda's program of re-powering the M-41 includes:

- Engine: New and improved. The original gasoline engine was replaced by a diesel engine.
- New cooling system - water based replacing the air cooling.
- A new power unit and overhaul for the Allison CD-500.

The improved M-41 was tested under extreme environmental conditions and terrain. The testing included:

- Cooling capability
- Towing capability
- Fording capability
- Max speed and acceleration
- Side slope operation
- Climbing ability up to 60%
- Max speed on gradient

The re-powered M-41 has high durability and reliability as well as good fuel economy.



M-41 powerpack



AMX-13 Light tank

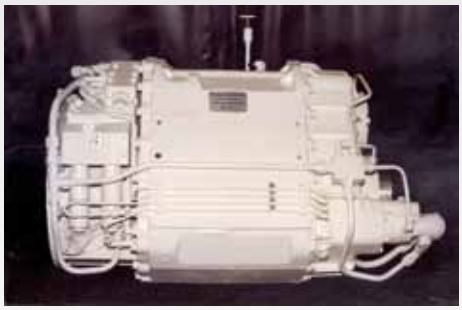
Nimda modernizing and upgrading program of the AMX-13 includes:

- New compatible diesel engine
- New Nimda made automatic transmission
- New 90mm gun
- New fire control system





AMX-13 DDC 6V53T engine



Nimda N-303 transmission

M-60

Nimda offers a full modernization suite for M-60 and M-48 Main Battle Tanks, including improved firepower, protection/survivability and mobility.

Nimda offers 2 powerpack versions for M-60/M-48, based on the 1200 HP and 908 HP Teledyne Continental engines and the X1100-5 Allison automatic transmission.

The 1200 HP powerpack was developed by Nimda in cooperation with Allison Transmission, General Dynamics Land Systems and TACOM for the M-60 Heavy Armoured Launched Bridge codenamed "Razorback".



M-60 powerpack



Historical Nimda projects



Shoet

Engine: DDC 6V53, 210 HP
Transmission: Allison, MT643

IDF

IDF

Half Track

Engine: DDC 6V53, 172 HP
Transmission: Allison, TX-100-1





Sherman

Engine: DDC 8V71 Diesel 475 HP
Gun: 60mm gun – IMI

Foreign Army

Reo 2 ton

Engine: DDC 4-53

IDF





Centurion

Engine: DDC 12V92T 900 HP
Transmission: Allison, CD-850-6

Swedish Army

Mexican Army

Hanchell

Engine: DDC 6V53, 210 HP
Transmission: Allison, TX-100





Dabur Patrol boat

Engine: MTU/DDC 16V92T
Transmission: ZF Marine

Israeli Navy

Israeli Navy

Dvora Patrol boat

Engine: MTU/DDC 12V-4000
Transmission: ZF Marine



The group's subsidiaries



New Jersey-USA office

DEI – New-Jersey, USA

Diesel Engineering Inc. (Diesel Inc.) is an independent New Jersey USA based company, a subsidiary of Nimda - Diesel Engineering group.

Diesel Inc. engages in sales, purchasing, outsourcing, consulting, representing and distributing various products and services in the USA.

Among others, Diesel Inc. is a formally approved supplier to various governmental agencies in the USA, such as the US Army, the US Navy, TACOM, DSMC, the UN as well as to foreign international governmental agencies, embassies, and leading worldwide companies.

NB – Prague, Czech Republic

Nimda Branch (NB) is a subsidiary of Nimda – Diesel Engineering group. It operates in the Czech Republic and was established in 2002 (operations started at 1994).

Nimda Branch initial main task has been to develop, produce, test and support the XTG411 transmission and to develop the complete powerpack for the T-72 upgrade program in the Czech Republic.

As from 2007, Nimda Branch has been appointed as the Allison Transmission distributor of commercial transmission for the Czech Republic. Nimda Branch under Nimda Co. Ltd has the manufacturing rights for Allison's XTG411-6 transmission.

Nimda Branch is equipped with unique testing facilities and has knowledgeable and experienced engineers for special power train component development and testing.





Prague-Czech Republic NB office and Workplace Facility





Nimda Branch control room of XTG-411 transmission testing Dynamometer in Prague





Nimda Branch XTG-411-6A transmission testing flywheel Dynamometer in Prague

Allison Transmission Granted Nimda - NB XTG 411- Manufacturing license

The XTG411 type transmission is an Allison Transmission design for use with transversely mounted engines, has a compact design and high power to size and weight ratio. It has a spur gear input transfer and integrated torque converter with automatic lock up clutch, has integral steering and is equipped with service/parking brakes. The transmission has four forward speeds and two reverse speeds. Allison granted manufacturing rights to Nimda Ltd. and it is manufactured in Prague Czech Republic by Nimda Branch subsidiary of Nimda.

Improvements over the original XTG411-2A are in:

Torque Converter Increased capacity torque converters to accommodate higher horsepower and improved cooling.

Clutch range Better durability by using improved friction material and better lubrication.

Brakes

- Higher capacity due to increase number of plates.
- improved lube cooling
- Better durability and performance by using improved friction material.



Oil pump

- Enhanced oil pump capacity for the XTG411-4.5 / 5.5 / 6 type transmission.



The XTG411-5.5 & 6 versions are with fully automatic range selection with electronically adaptable programmed shift logic. The control has also one forward and one reverse manual override shifts. The transmission has an electronic diagnostic unit which monitors operation against pre-set operation parameters.

The XTG411-4.5/5.5/6 are made and supplied by
Nimda Co. Ltd / Nimda Czech Republic
under manufacturing license agreement with Allison Transmission (XTG-411-6).

The XTG411-4.5 is used in the heavy APC "Achzarit" rated at 710HP @ 43Mton GVW.
The XTG411-2-4 is used in U.S SPG M-107, M-109 and M-110.
The XTG411-6 is an automatic, electronic control transmission used to power the upgraded T-72 tank with a rating of 1000HP @ 48Mton.

AFV users of XTG-411 Allison transmission Manufaturing rights


Achzarit


T-72


Stingray


M-578

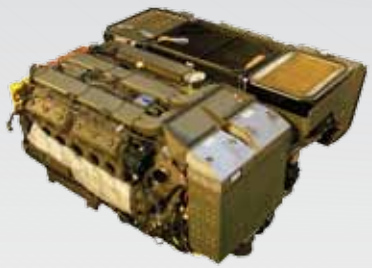

M-110


M-109


M-107

Selected Nimda designed powerpacks

T-72



Engine: Perkins 1000 HP
Transmission: XTG-411-6N

ACHZARIT



Engine: DDC 8V92TA 710HP
Transmission: XTG-411-5/6

M-60



Engine: L3-AVDS-1790-9 1200HP
Transmission: Allison X1100

T-55



Engine: DDC 8V71TA 625HP
Transmission: XTG-411-5

M-113



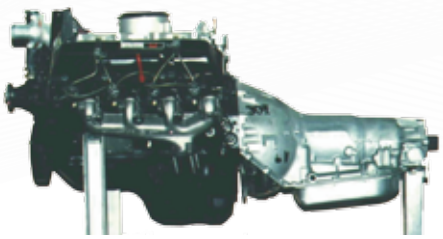
Engine: DDC 6V53T 300HP
Transmission: Allison 3200

BMP-II



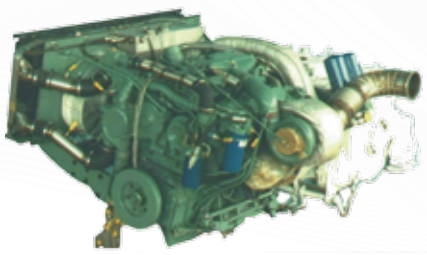
Engine: Maxx Force 6.48V
Transmission: Allison X200

ABIR 4X4



Engine: DDC 6.2/6.5L
Transmission: THM Hydromatic

M-41



Engine: DDC 8VT 465HP
Transmission: Allison CD-500

Diesel Engineering Technology (2003) Ltd. Profile

Diesel Engineering Technology (2003) Ltd (DEL) is Nimda's fellow subsidiary. DEL headquartered in Lod, Israel is an OEM representative specializing in distributing, promoting, marketing, selling and servicing commercial and military products such as diesel engines, automatic transmissions, heavy duty vehicles, earth moving equipment and marine equipment.
Among the companies DEL represents are: MTU-Detroit Diesel Corporation, Allison Transmission, Oshkosh Trucks, Ditch Witch, Mustang, IHI, Yanmar, Delco Remy, Hamilton Jet, Indeco, Pierce & Tohatsu.

Our products categories:

- Mini-Excavators/Earth Moving equipment
- Diesel engines – large, medium and small
- Heavy duty trucks and Pierce fire trucks
- Automatic transmissions
- Control systems
- Starters and alternators
- Marine propulsion system
- Diesel generators and electrical accessories
- LNG - Gaz containment tanks plants
- Underground “infrastructure” detection & measurement equipment


H.D truck with Allison


Oshkosh RFF


Allison Transmission


Pierce


Infrastructure detection & measurement equipment


Mustang


IHI Construction


Indeco


IHI Felguera


Ditch Witch


Marine equipment Hamilton Jet


Tohatsu - Outboard


DDC engine


Yanmar engines


Delco Remy starters & alternators

Nimda Co. Ltd has over 40 years of experience in developing and manufacturing modern Powerpacks and Power-Trains as well as other automotive systems for military and commercial vehicles.

Nimda engineers and all Nimda-Diesel Engineering group are dedicated to excellence performance in order to establish modern and global technical capability.

Visit us in www.nimda.co.il for more information

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