

# Polytron

*Lubrication Technology Based on Micro-Metallurgical Process*

# Some Immediately Noticeable Benefits of using Polytron

- Reduced temperature
- Reduced vibrations
- Reduced noise level
- Reduced electrical power consumption
- Considerable reduction in emission pollutants
- Increased engine power and smoother operation
- Very effective protection of the engine against moisture and water flooding.



## Possible Problems That Can be Solved Immediately, using Polytron

- Overheating
- Excessive vibrations
- Excessive noise hazard
- Excessive electrical power consumption
- Poor air quality in closed areas with high concentration of engine operated equipment
- Sluggish engine and equipment operation
- Reinstating and putting vehicles and equipment back to work after they submerged in water during flood (like in floods that occur in some countries)

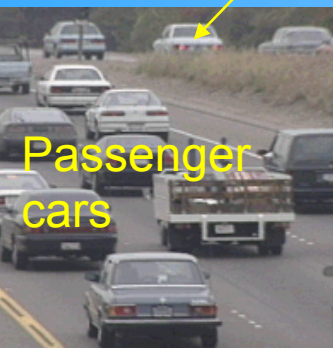
# Result —————> Polytron Products **FOR**

With the following major features

In passenger cars, light & heavy duty trucks and other equipment

Polytron products:

- \* Eliminate up to 95 % of Engine and Equipment wear and extend service life of engines and equipment by 600% to 900%.
- \* Reduce engine & equipment operating temperature, vibrations and noise level.
- \* Eliminate deposits buildup and keep engines / equipment completely clean.
- \* Extend oil change intervals & oil filter life by 300% to 600%.
- \* Contribute to considerable fuel and oil economy.
- \* Contribute to 40% to 75% cleaner emission gases.
- \* In the event of oil loss, engine / equipment is protected for tens of kilometers / work hours.
- \* Resulting in reduction of up to 60% in maintenance and operational cost.



## Major Benefits of using Polytron, Measurable Over Service Life of Equipment.

- Extended service life of equipment to overhaul by 600% to 900%
- Considerable reduction in replacement parts
- Considerable reduction in equipment replacement



## Combined Value of the Benefits

- Up to 65% Reduction in Maintenance and Operational Costs
- Up to 90 % Reduction in Downtime
- Considerable Increase in Productivity
- Much cleaner emissions
- Much less waste oil



## Additional Benefits of using Polytron, Measurable Over Short Period of Time

- Reduction in fuel consumption, 10% on the average. (through monitoring fuel consumption.)
- Reduction in wear by more than 95% (through used oil analysis.)
- Extending oil change intervals 300% to 600% (through used oil analysis.)
- Reduction in top-up volumes of oil (through monitoring oil consumption.)



## Possible Problems That Can be Solved within short period of time using Polytron

- Excessive fuel consumption (due to older equipment, or poor maintenance)
- Excessive wear (due to high loads, insufficient lubrication or defects in equipment production and design, or poor maintenance, or harsh environment).
- Need to change the oil more frequently (due to engine aging problems or poor maintenance).
- Excessive top-up volumes of oil (due to engine aging problems or poor maintenance).

# Polytron main Products and their main Applications

## Polytron MTC



### Packages:

**473 ml bottle** (for passenger cars and light vehicles)

**4 lit bottle** (for trucks and heavy duty equipment)

**19 lit pail, 208 lit drum** (for trucks and heavy duty equipment fleets)

- Diesel and Gasoline Engines
- Auto / Manual Transmissions
- Differentials
- Power Steering
- Hydraulics (5% to 10% added to a lubricant by volume) in :
  - a. Farm machinery
  - b. Construction Equipment
  - c. Other off-highway applications.
  - d. Heavy Duty Diesel Trucks
  - e. Light Diesel Trucks.
  - f. Diesel/ Gasoline passenger cars.
  - g. Pumps.
  - h. Diesel Electrical Generators.
  - i. Diesel Marine Engines
  - j. Mining Equipment.
  - k. Two-cycle engines.
  - l. Torque Converters

### Compressors (5% added to compressor oil)

In all the industries and applications where any types of compressors are used.

### Open Gear Oils (10% added to gear oil) in: - open gears - wire ropes and cables

All the grades that provide lubrication for mining equipment including: - girth and pinion gears on rod and ball mills - rack and pinion gears on shovel dipsticks - swing and pinion gears on top of the lower frame of shovels and draglines which are sometimes served with an automatic lubrication system.

Open Gear Oils for electric shovels and draglines.

### Metalworking Cutting Oils (10% by volume) for:

- milling, shaping, planing, lathe work, drilling and pipe perforating operations. Broaching, gear hobbing, threading, tapping and other demanding works.

- machining of aluminum and aluminum alloys, copper, brass, bronze, and high strength copper alloys.

Benefits in using Polytron :

- tools may last up to 200% longer
- much smoother surface finish.
- prevents welding (sticking to the cutting tool) in ferrous and non-ferrous metals.



## Polytron MTC (continued)

### Gear Oils (10% by volume)

Closed Gear Oils in the following applications:

- rear axles
- transmissions
- differentials.
- spiral bevel
- power dividers
- oil lubricated steering axle wheel bearings.

### Handy oils (10% by volume) for lubrication of:

- small electric motors such as used in household appliances, sewing machines.
- office equipment
- garden tools
- door hinges and locks.

### Knit Oils , (5% by volume) for:

- circular double-knit machines
- circular single-knit
- full-fashioned
- tricot and all other knitting machines.

### Way Oils (10% by volume) in the lubrication of:

- ways in many types of machining equipment, e.g., lathers, planers, shapers, drilling and tapping.

machines including those where the loads can be very high. enclosed gears. - industrial plain and anti-frictional bearings.

lubrication of chain drives.

### Chain Bar Oils (10% by volume) for:

chainsaws with either hand operated or automatic chain oilers to lubricate the chain, bar and sprocket.

chain drivers on: straddle lift , lumber carriers,

- motorcycle chains - lawnmowers - farm equipment.

### Transformer oil (5% to 10% by volume)

- High Voltage Transformers

#### Benefits :

- Increased break though Voltage
- Reduced temperature

And many more applications ...

For any specific application that is not listed here, please be advised to consult the local distributor.

# Polytron main Products and main Applications (continued)

## Polytron Penetrating Lubricant



**Packages:**  
200 ml spray can  
4 lit bottle  
19 lit pail, 208 lit drum

### 1. Excellent lubricant for:

- slides - guides - ways - chains
- screws - cams - racks
- pinion sets - moving parts of electrical and air tools.
- moving parts of conveyors and electrical motors in a variety of industrial and commercial equipment.

### Direct benefits:

- Keeps equipment parts clean from any deposit build-up.
- Lowers operating temperature and noise level.
- Eliminates 95% to 99% of equipment wear extending its service life by 600% to 900%
- Equipment is protected in wider range of temperatures
- Protects equipment in harsh environment of dust moisture and extreme temperatures.

### Machining of ferrous and non ferrous metals.

Spraying or brushing the product on cutting tools or saw blades from time to time results in the following

### Direct benefits:

- cutting tool service life may be extended 100% to 200% or more
- much smoother surface finish.
- prevents welding (sticking of processed metal to the cutting tools) in ferrous and non-ferrous metals.

**Protection** of Electrical contacts, terminals and electrical collectors from corrosion and electrical oxidation, and as moisture repellent in electric-motor operated equipment, like cranes, elevators, etc.

### Preventive lubrication

of parts before assembly of mechanisms (or engines).

- Lubrication of parts for smoother / easier fitting-in during assembly of mechanisms (or engines).
- Very effective in penetrating and retarding rusty and oxidized surfaces in mechanisms that work in severe conditions of moisture and temperature.

### And many more applications ...

For any specific application that is not listed here, please be advised to consult the local distributor.



# Polytron main Products and main Applications (continued)



## Polytron EP-2 Lithium Complex Grease

### Packages:

0.4 kg tube, 16 kg pail, 182 kg drum

### Automotive and industrial equipment operating under severe service and a wide range of temperatures as:

- mining equipment
- construction equipment
- material handling equipment
- marine deck equipment and cranes
- oil fields and offshore drilling equipment
- pulp and paper machines
- dredging equipment
- logging equipment
- rock quarry equipment (jaw crushers)
- truck fleets
- track roller bearings on all "tracked" type tractors
- rotary drill collar threads and drill pipe threads.

### Curve Lubrication.

Lubrication of contact areas between wheel flanges of locomotives and railroad cars and railroad tracks using automatic rail curve lubricators.

### Lubricant for:

- slides and guides
- ways – chains – screws - cams - racks
- pinion sets in sawmills, plywood presses, and chain tracks.

### Lubricant for:

- Fifth wheels, king pins, wheel bearings, steering system bearings, and all chassis points including ball joints and universal joints, journal bearings in low and moderate speed antifriction bearings in construction equipment such as:
- bulldozers, scrapers, loaders, shovels.
  - roller chains, trunions, gears, cables sheaves, slides, chassis bearings.
  - conveyor bearings, sliding and rubbing surfaces, kiln car bearings, heavily loaded pivot pins, splined shafts, or other surfaces subjected to sliding, vibration, or oscillation where fretting is encountered.

### More specific applications include lubrication of:

- steering drag links - transmission cross shaftspring - pins - shackle pins - brake
- cam shafts - fifth wheel faceplates and pivots operating under wide range of temperatures.
- water pumps operating in water, mud or dusty conditions.
- Bearings on air-conditioning units in buildings.
- unsealed electric motor bearings operating under moist conditions.
- applications where silent operations are called for.

### And many more applications...

For any specific application that is not listed here, please be advised to consult the local distributor.

### Direct Benefits

- Extended maintenance intervals
- 300% to 600%
- Extended service life of equipment
- 600% to 900%
- Lowers temperature and vibrations

# Polytron main Products and their main Applications (continued)



## Polytron Fuel Conditioner

**Packages:** **355 ml bottle** (for passenger cars and light vehicles. Treats 360 lit of fuel, diesel or gasoline) **19**  
**4 lit bottle** (for trucks and heavy duty equipment. Treats 4000 lit of fuel)  
**lit pail** (Treats 19000 lit), **208 lit drum** (Treats 208000 lit) for trucks and heavy duty equipment fleets.

As an additive package to Diesel Fuel (0.1% by volume) in Heavy duty diesel engines with the

following Benefits:

- Keeps clean the entire fuel system, upper engine from carbon deposits. Injectors, valves, valve seats, upper piston rings, piston to combustion chamber,
- and at the same time lubricates moving part of the fuel system, upper engine (injectors, valve seats, upper piston rings, fuel and injector pumps).

### Combined Benefit For Diesel

- Extended service life of fuel system, moving parts and upper engine by more than 100%.
- In combination with the use of Polytron MTC, the exhaust pollutants are reduced by up to 75%.
- In combination with the use of Polytron MTC may reduce fuel consumption by up to 20% or more

As an additive package to Gasoline fuel (0.1% by volume) for passenger cars.

### Combined Benefit for Gasoline Engines

- Extended service life of fuel system, upper engine by

the use of Polytron  
pollutants are  
5%.  
the use of Polytron  
fuel consumption by

## Important notice:

In Engines it is absolutely necessary to use Polytron MTC together with Polytron FC in order to get the best possible performance and the longest possible service life out of it.

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- upper engine (injectors, valves, valve seats, upper piston rings, fuel pumps and injector pumps).
- Protects the entire intake system against rust and corrosion that can be caused by corrosion in gasoline tanks.
- helps to remove water to prevent gas line freeze.

# Few examples of applications by Industry

## Steel Mills

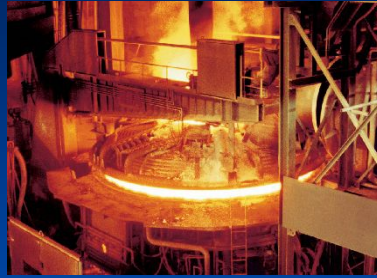
### Main Areas of Application



Coke Plants



Blast Furnaces



Electric Arc Furnace



Rolling Mills



Casters

### Some Specific Application

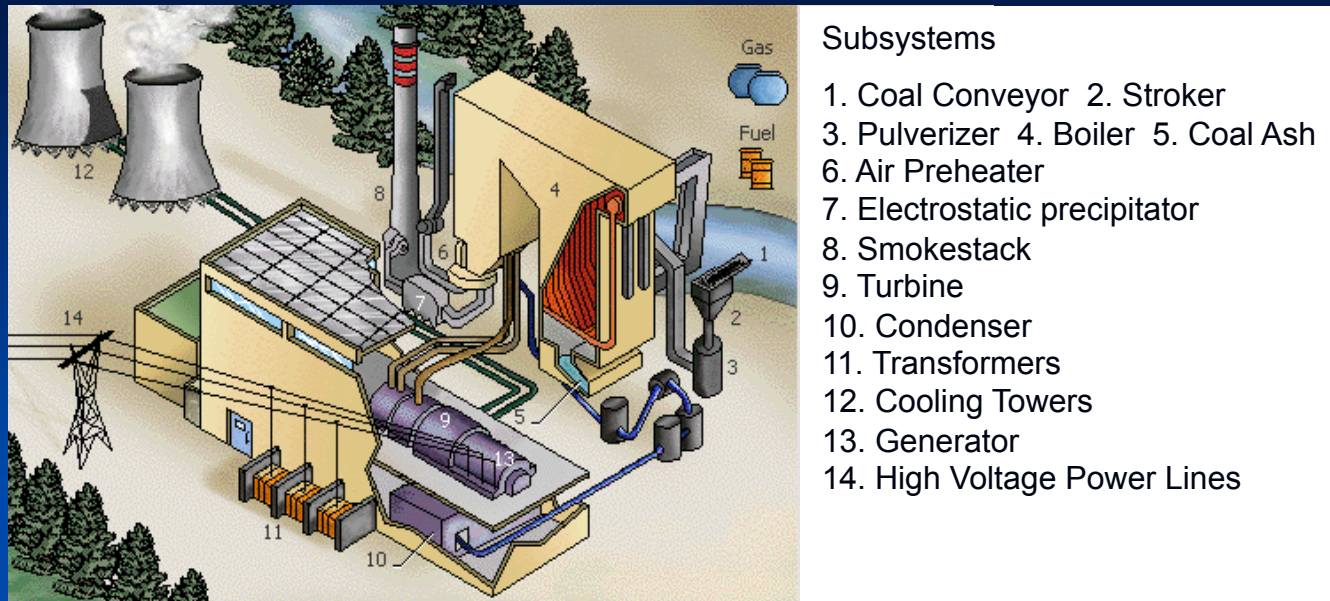
- Bearing Lubrication
- Gear Lubrication
- Heat Transfer Fluids
- Machining of Metals
- Refrigerators
- Compressors and Exhausters
- Special Applications
- Waste Gas Fans

- Heat Treatment of Metals
- Hydraulic Equipments
- Railroad Oils
- Rust Prevention
- Turbines
- DG Sets
- Greases
- Trunion Bearings



# Few examples of applications by Industry (continued)

## Power Generation Plant



### Some Specific Application

- Coal Grabbers
- Coal Crushers
- Vibrating Screens
- Coal Conveyors
- Gearboxes (Turbine & Generator)
- Gearboxes (Boiler Feed Water Pumps)
- Motors (especially grease)
- Transformer (transformer oil)
- Etc.



# Application instructions for specific equipment – examples

## Application instructions for forklifts

### Polytron EP-2 Grease / Polytron Penetrating Lubricant

To treat all Forklifts' friction points, hydraulics and chains with Grease and Penetrating Lubricant.

1<sup>st</sup> Treatment ASAP.

2<sup>nd</sup> Treatment as per greasing schedule

3<sup>rd</sup> Treatment 2 x to 3 x previous greasing interval

### Polytron MTC

To treat the Engine with 10% Polytron MTC.

1<sup>st</sup> Treatment ASAP

2<sup>nd</sup> Treatment as per oil change schedule

3<sup>rd</sup> Treatment – once every 4 - 6 months

Once off Diffs, Gear Box, Power Steering, Air Con with Polytron MTC

## Application instructions for specific equipment – examples (continued)

### Application instructions for Cranes

#### Polytron MTC / EP-2 Grease / Penetrating Lubricant

Apply Polytron EP-2 grease to all the areas as required by maintenance manual of the Crane. Add Polytron MTC, 5% by volume to hydraulics, and apply Polytron Grease and/or Polytron Penetrating Lubricant to the cable.

1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Treatment as per greasing schedule

4<sup>th</sup> Treatment extended greasing intervals up to 3X on a case-by-case basis

Subsequent treatments 3X-5X on a case-to-case basis

Results: Immediate smoother and quicker operations. Greasing intervals extended by 3-5 times. Less down time; more productivity with improved optimal operations.

50% less replacement parts.

#### Polytron MTC

1<sup>st</sup> Engine treatment with 10% Polytron MTC about 500 km (or 100 work hours) before first oil change.

2<sup>nd</sup> treatment as per schedule.

3<sup>rd</sup> Treatment extended oil change up to 4X

Subsequent treatments up to 4X and on case-to-case basis up to 7X (based on used oil analysis)

One off treatment for manual transmission (10% by volume), or automatic transmission (5% by volume)

Power Steering (5% by volume).

# A glimpse at the Type of Customers that buy and use Polytron products

## DEFENSE

- Israeli Army
- Singapore Navy & Army
- French Army
- Serbian Army
- Korean Army

## CORPORATE & GOVT.

- Steel mills  
(Europe, Malaysia, Singapore, and more)
- Manufacturing plants  
(Malaysia, Singapore, and more)
- Shipping vessels  
(Singapore and more)
- Power plants  
(Bulgaria, Serbia, and more)
- Quarries and Cement Plants  
(Israel, Malaysia, Serbia, Bulgaria Greece and more)
- Transportation, Railroad, Trucking

## RETAIL

- Auto part stores
- Car agencies
- Repair Shops
- Gas Stations

## Polytron products summery.

There are no other products on the market today that can squeeze out of engines and any equipment the best possible performance, the longest service life, the lowest downtime and the highest productivity and cost effectiveness ever, like Polytron products can.

We invite you to take the ***Polytron*** challenge and put these miraculous products to the test.