



HYDRAULIC OIL ADDITIVE



Power Up **HydraMaxx™** is Specifically Engineered to:

- **Reduce Catastrophic Failures & Downtime**
- **Enhance Cold Weather Operation (AntiFreeze)**
- **Extend Fluid Life**
- **Enhance Component Life**
- **Separate Water from Hydraulic Fluid**

HydraMaxx™ is specially designed for use in hydraulic systems where piston, gear, or vane pumps are used to circulate oil and transmit power. HydraMaxx™ has been engineered to maintain the maximum operating efficiency of hydraulic systems. It works with your existing oil to provide long term wear and corrosion protection for metal components and extend seal and hose life.

Reduce Downtime & Catastrophic Failure

Advanced extreme pressure boundary additives provide unequalled protection in high load/high friction conditions. Proper lubrication under extreme conditions reduces mechanical malfunctions and failures.

Enhance Cold Weather Operation (AntiFreeze)

Pour point depressants reduce the pour point of hydraulic fluids therefore improve fluid flow at reduced temperatures. Reduced pump cavitation helps to avoid pump failures, and pressure-spike induced seal & hose failures.

Extend Fluid Life

Anti-oxidants prevent fluid breakdown, while viscosity index improvers stabilize the oil in extreme temperatures and prevent quality deterioration. Increased protection of the basic lubricating components of the oil allow for extended fluid life.

Extend Component Life

Rust and Corrosion inhibitors protect against adverse effects of moisture (condensation build up in oils). Friction reduction dramatically lowers operating temperatures, adding life to pumps, seals and hoses.

Separate Water from Hydraulic Fluid

HydraMaxx™ improves a fluid's ability to demulsify water more readily, allowing water to be separated from the lubricant at an accelerated rate.

HydraMaxx™ was mixed at 5% with typical R&O and AW hydraulic oils to determine its effect on the pour point of the oil.

Table 1 - Fluid Pour Point Data

Fluid	Neat Oil	+5% Hydra Maxx
A ISO 22	-56°C (-69°F)	-60°C (-76°F)
ISO 32	-42°C (-44°F)	-50°C (-58°F)
ISO 68	-38°C (-36°F)	-46°C (-51°F)
B ISO 32	-20°C (-4°F)	-30°C (-22°F)
ISO 68	-20°C (-4°F)	-29°C (-20°F)
ISO 100	-21°C (-6°F)	-28°C (-18°F)
C ISO 32	-32°C (-26°F)	-42°C (-44°F)
D ISO 32	-35°C (-31°F)	-44°C (-47°F)

APPLICATION:

HydraMaxx™ is recommended in automatic transmissions at a 1% ratio as well as all hydraulic circulating systems at a 3% ratio for ambient temperatures above 0°C (32°F) and a 5% ratio in operating conditions where the temperature may drop below 0°C (32°F). HydraMaxx™ is recommended for use with mineral oils, polyalphaolefin, and diester based synthetic fluids. HydraMaxx™ is not recommended for use with water based fluids, phosphate esters or polyglycol fluids.

COLD WEATHER FLUID FLOW

HydraMaxx was mixed at 5% with typical R&O and AW hydraulic oils to determine its effect on the pour point of the oil. The results in Table 1 show that HydraMaxx lowers the pour point of these oils by up to 10°C (18°F).

Table 1 - Fluid Pour Point Data

Fluid	Neat Oil	+5% Hydra Maxx
A ISO 22	-56°C	-60°C
ISO 32	-42°C	-50°C
ISO 68	-38°C	-46°C
B ISO 32	-20°C	-30°C
ISO 68	-20°C	-29°C
ISO 100	-21°C	-28°C
C ISO 32	-32°C	-42°C
D ISO 32	-35°C	-44°C
E ISO 32 (HVI 36)	-48°C	-55°C

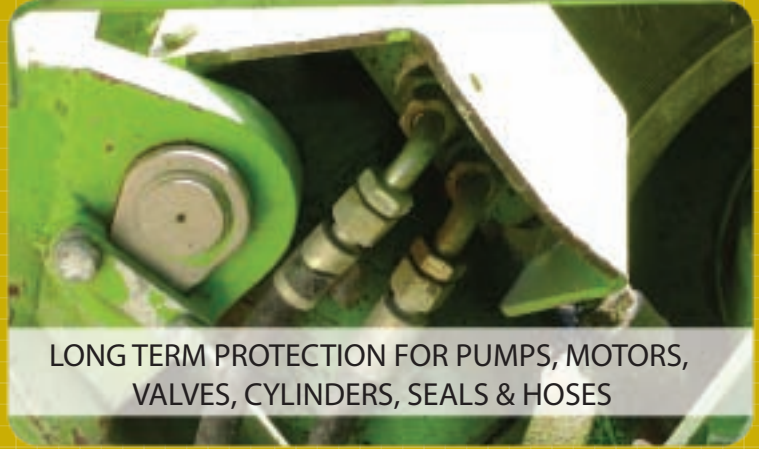
HydraMaxx is available in the following sizes:

- 150 mL (5 oz.) bottle
- 1 Litre (35 oz.) bottle
- 4 Litre (1 Gallon / 175 oz.) jug
- 20 Litre (5.5 Gallon / 700 oz.) pail
- 205 Litre (56 Gallon) drum

HYDRAMAXX

HYDRAULIC OIL ADDITIVE

HYDRA MAXX is the first hydraulic treatment specifically designed to maintain maximum operating efficiency of your hydraulic system. This unique hydraulic system treatment from Power Up Lubricants works with your existing oil to provide long term protection for pumps, motors, valves, cylinders, seals and hoses. **HYDRA MAXX** is formulated with anti-wear and extreme pressure additives to reduce friction and wear and dramatically improve the hydraulic oil's ability to withstand heavy loading, shock and vibration. **HYDRA MAXX** also contains additives to improve corrosion inhibition, cold temperature flow and water separability.



LONG TERM PROTECTION FOR PUMPS, MOTORS, VALVES, CYLINDERS, SEALS & HOSES

Special Notations on Hydra Maxx	
Viscosity:	A 5% application of HYDRA MAXX in typical ISO 32, 46 and 68 hydraulic oils results in little or no change in viscosity or viscosity index of the oil.
Pour Point:	HYDRA MAXX imparts a positive influence to the pour point of most hydraulic oils. A typical ISO 32 oil with a pour point of -30°C (-22°F) improved to -38°C(-36°F) with the addition of 5% HYDRA MAXX.
Demulsibility:	HYDRA MAXX improves an oil's ability to separate water. A typical ISO 32 oil which normally requires 25 minutes for complete separation (using ASTM D1401) improved to only 15 minutes when 5% HYDRA MAXX was mixed with the oil.
Application:	HYDRA MAXX is recommended in hydraulic system applications where gear, piston and vane pumps are used to circulate oil and transmit power. HYDRA MAXX should be applied at 3% (30mL/L or 4 oz./gal.) of the circulating oil volume in operating conditions over 0°C/ 32°F and at 5% (50 mL/L or 6 oz./gal.) of circulating oil volume in operating conditions where the temperature may drop below 0°C/32°F. HYDRA MAXX is recommended for use with mineral oils and polyalphaolefin and diester based synthetic fluids.

Typical Properties of Hydra Maxx		
Property	Method	Result
Appearance		Clear, light amber liquid
Color	ASTM D1500	1.0 - 1.5
Viscosity @ 40°C (104°F) @ 100°C (212°F)	ASTM D445	46 cSt 6 cSt
Specific Gravity @ 15.6°C (60°F)	ASTM D941	0.98 (H ₂ O=1)
Density	ASTM D941	0.98 g/mL
Pour Point	ASTM D97	-30°C (-22°F)
Flash Point	ASTM D92	140°C (284°F)
Base Number	ASTM D4739	1.5 mg KOH/g
Acid Number	ASTM D664	0.5 mg KOH/g
Zinc and Lead Content		Nil
Colloidal Suspensions (Solid particles, PTFE, graphite, MoS ₂)		None

INHIBITS RUST AND CORROSION

Rust and corrosion contamination causes many premature pump failures. **HYDRA MAXX** dramatically enhances a fluid's ability to fight rust and corrosion formation. **HYDRA MAXX** has an excellent copper corrosion rating of 1b in the ASTM D130 Copper Corrosion test. A mixture of 5% **HYDRA MAXX** in straight paraffinic oil easily passes the ASTM D665 Rust Prevention Characteristics test.

Test Data on Hydra Maxx		
Property	Method	Result
Copper Strip Corrosion (130°C x 2 hours)	ASTM D130	1b
Rust Preventing Characteristics	ASTM D665	PASS
Elastomer Compatibility (5% in ISO 32 Paraffinic oil)	ASTM D4289 (Modified)	
• Nitrile		PASS
• Neoprene		PASS
• Fluorocarbon		PASS
Hydrolytic Stability (5% in ISO 32 Paraffinic oil)	ASTM D2619	
• Viscosity change		Negligible
• Copper weight loss		0.67 mg/cm ²
• Copper appearance		1b - 2b, shiny
• Acid number change		0 mg KOH/g

"Before using **HydraMaxx** in our automatic transmissions, we were going through 30 transmissions annually. Now with the addition of **HydraMaxx**, we go through less than 5 transmissions per year. On top of that, we have now gone from 3,000 to 6,000 miles on an oil change and at our old oil change rate we were losing engines every year. Now I can't remember the last time we lost an engine."

John Heard, Caddo Parish Sheriffs Department - Shreveport, LA

