



MAG 1®

Evolutionary Performance™



**AGRICULTURAL
LUBRICANTS**



Evolutionary Performance™

FMX TECHNOLOGY **FRICION MANAGEMENT FOR XTREME PROTECTION**

TRANSMISSIONS & HYDRAULIC FLUIDS



MAG 1® Agriculture and Construction Lubricants provide unsurpassed protection even in the harshest conditions. We offer a wide range of lubrication products for most farming and construction operations that meet the difficult challenges of effectively balancing performance, strength and durability. Benefits of MAG 1:

- Outstanding thermal and oxidative stability
- Protection against component wear to extend equipment life
- Excellent pumpability in extreme cold
- Protection rust and corrosion from water contamination
- Optimally balanced frictional characteristics to ensure precise clutch and brake operation and reduce chatter

MAG 1 UNIVERSAL TRACTOR TRANS HYDRAULIC FLUID

MAG 1 Premium Universal Tractor Trans-Hydraulic Fluid is formulated with high-quality paraffinic base stocks, and is recommended for farm equipment with transmission final drives, wet brakes, clutches, and hydraulics supplied from a common reservoir.

MAG 1 HYDROSTATIC MV ISO 46

MAG 1 Hydrostatic MV ISO 46 is recommended for use in industrial hydraulic systems, skid-steer hydrostats/hydraulics, lawn and turf hydrostats/hydraulics, hydraulic systems that recommend multi viscosity and logging operations.

MAG 1 TO-4 TORQUE FLUIDS

MAG 1 TO-4 Torque Fluids are multipurpose lubricants designed for use in transmissions, wet brakes and hydraulic systems requiring a fluid meeting Caterpillar® TO-4 requirements. This fluid has outstanding hydraulic oil stability and allows protection against high-pressure pump wear. Available viscosities: SAE 10, SAE 30, and SAE 50

| PACK SIZES | Pack Size | Product # | | Pack Size | Product # |
|--|--------------|---------------------------|---------------------------|------------|-----------|
| | | 3/1 Gallon | | 60681 | |
| Universal Tractor Trans-Hydraulic Fluid* | | | TO-4 Torque Fluid SAE 10* | 55 Gallon | 66065 |
| | 2/2.5 Gallon | 00522 | | 330 Gallon | 65584 |
| | | | TO-4 Torque Fluid SAE 30* | 5 Gallon | 65845 |
| | 5 Gallon | 00525 | | 55 Gallon | 62858 |
| | | TO-4 Torque Fluid SAE 50* | 330 Gallon | 65585 | |
| | | | 5 Gallon | 65846 | |
| Hydrostatic MV ISO 46* | | | | 55 Gallon | 65848 |
| | 3/1 Gallon | 63952 | | 330 Gallon | 66366 |

| TYPICAL PHYSICAL PROPERTIES | | | | | | |
|-----------------------------------|------------|---|-----------------------|--------------------------|--------------------------|--------------------------|
| Properties | Method | Universal Tractor Trans-Hydraulic Fluid | Hydrostatic MV ISO 46 | TO-4 Torque Fluid SAE 10 | TO-4 Torque Fluid SAE 30 | TO-4 Torque Fluid SAE 50 |
| Brookfield Viscosity at -40°C, cP | ASTM D2983 | 42,000 | - | - | - | - |
| Calcium, wt. % | ASTM D5185 | 6.334 | 0.003 | 0.242 | 0.242 | 0.242 |
| Color | ASTM D1500 | 1.5 | 0.5 | 2.0 | 5.0 | 8.0 |
| Flash Point °C | ASTM D92 | 224 | 210 | 210 | 216 | 218 |
| Flash Point °F | ASTM D92 | 435 | 410 | 410 | 420 | 425 |
| Gravity, °API | ASTM D287 | 32.54 | 31.50 | 30.75 | 27.74 | 26.97 |
| Oxidation Hours | ASTM D943 | - | 5000 | - | - | - |
| Phosphorus, wt. % | ASTM D5185 | 0.13 | 0.033 | 0.092 | 0.092 | 0.092 |
| Pour Point °C (°F) | ASTM D5950 | -42°C (-44°F) | -48°C (-54°F) | -33°C (-27°F) | -30°C (-22°F) | -27°C (-17°F) |
| Specific Gravity @ 60°F (15.6°C) | ASTM D4052 | 0.8626 | 0.8681 | 0.8721 | 0.8886 | 0.8929 |
| Viscosity @ 100°C cSt | ASTM D445 | 9.322 | 7.72 | 6.929 | 11.87 | 19.45 |
| Viscosity @ 40°C cSt | ASTM D445 | 55.13 | 43.93 | 43.25 | 106.6 | 212.6 |
| Viscosity Index | ASTM D2270 | 152 | 146 | 118 | 100 | 104 |
| Zinc, wt. % | ASTM D5185 | 0.139 | 0.041 | 0.11 | 0.11 | 0.11 |

*Available in Bulk



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FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

CLAIMS

| | Universal Tractor Trans-Hydraulic Fluid | Hydrostatic MV ISO 46 | TO-4 Torque Fluid SAE 10 | TO-4 Torque Fluid SAE 30 | TO-4 Torque Fluid SAE 50 |
|--|---|-----------------------|--------------------------|--------------------------|--------------------------|
| ABEX/Denison HF-0, HF-1, HF-2 | ○ | | | | |
| AGCO 821XL | ○ | | | | |
| Allison C-3 | ○ | | | | |
| Allison C-4 | ○ | | ● | ● | ● |
| Allison C-4, C-2 | ○ | | | | |
| API GL-1 | | | | | |
| API GL-4 | ○ | | | | |
| Bosch Rexroth | | ○ | | | |
| Case JIC 144, 145 | ○ | | | | |
| Case MS-1209, 1210, 1207, 1204 | ○ | | | | |
| CAT TDTO | | | ○ | ○ | ○ |
| CAT T0-2 | ○ | | ○ | ○ | ○ |
| CAT T0-4 | | | ● | ● | ● |
| Cincinnati/MAG IAS P-70 | | ○ | | | |
| Deutz, Allis-Chalmers Power Fluid 821 | ○ | | | | |
| DIN 51524, Part 1,2,3 | | ○ | | | |
| Ford New Holland M2C41A,B, M2C48B, M2C53A, M2C86A | ○ | | | | |
| Ford New Holland M2C86B, M2C134A, B, C, D, (NH-410B) | ○ | | | | |
| General Motors LS-2 | | ○ | | | |
| Grove Manufacturing Hydraulic Fluid | ○ | | | | |
| Hesston-Fiat AF-87, Oilofiat Tutela Multi-F | ○ | | | | |
| International Harvester Hy-Tran B-6 | ○ | | | | |
| JCMAS HK | | ○ | | | |

| | Universal Tractor Trans-Hydraulic Fluid | Hydrostatic MV ISO 46 | TO-4 Torque Fluid SAE 10 | TO-4 Torque Fluid SAE 30 | TO-4 Torque Fluid SAE 50 |
|---|---|-----------------------|--------------------------|--------------------------|--------------------------|
| John Deere J14C, 303 | ○ | | | | |
| John Deere J20C/J20A/J21A | ○ | | | | |
| John Deere J20D | | | | | |
| Kubota UDT | ○ | | | | |
| Massey Ferguson M-1110, M-1127, M-1127A, M-1127B | ○ | | | | |
| Massey Ferguson M-1129, M-1129A, M-1135, M-1141 | ○ | | | | |
| Massey Ferguson M-1135, M-1141, M-1143, M-1145 | ○ | | | | |
| MAT 3525, 3505 | ○ | | | | |
| Oliver/White Q-1826, Q1766, Q1722, Q1766B, Q1705, Q1802, Type 55 | ○ | | | | |
| Parker Denison HF-0, HF-1 | | ○ | | | |
| Parker Denison HF-2 | | ○ | | | |
| Sauer/Danfoss (Sundstrand) ? Hydrostatic Transmission Fluid | ○ | | | | |
| Sperry Vickers/Eaton I-286-S, M-2950-S | | ○ | | | |
| Sperry Vickers M-2950-S Mobil Hydraulics, I-286-S Industrial Hydraulics | ○ | | | | |
| Steiger Hyd-Trans SEMS 17001 | ○ | | | | |
| US Steel 127, 136 | | ○ | | | |
| Valmet, Yanmar, New Idea Power Units, Leyland, Belarus & Fiat | ○ | | | | |
| Versatile Gear and Hyd-Trans | ○ | | | | |
| Vickers | | | ● | ● | ● |
| Vickers 35VQ25 | ○ | | | | |
| ZF TE-ML 03C | | | ● | ● | ● |

◆ = MAG 1 Recommended ● = Meets Requirements ○ = Suitable for Use



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FMX TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

HANDHELD & OTHER



MAG 1® PREMIUM BAR & CHAIN OIL

MAG 1 Bar and Chain Oil is specially formulated to protect your chain saw. Tackiness agent helps keep the oil on the chain even at high temperature and/or high speed operation. Benefits include:

- Prevents wear.
- Protects at low temperature.
- Clings to chain even at high temperatures and speed.

MAG 1 SNOW PLOW HYDRAULIC OIL

MAG 1 Premium Snow Plow Hydraulic Oil is specially formulated with anti-wear additives protecting metal components of high pressure hydraulic systems. Designed with anti-freeze additives to give excellent cold weather performance in extreme conditions to -50°F.

MAG 1 VACUUM PUMP OIL ISO 68

MAG 1 Vacuum Pump ISO 68 Oil is specially formulated with only the finest quality, hydrotreated, high viscosity index, paraffinic base oils and the most advanced and rigorously tested additive system to deliver unsurpassed protection and performance. Recommended for use in most rotary vane and piston pumps. Benefits include:

- Outstanding control of friction and wear.
- Provides unsurpassed protection in the harshest conditions of both hot and cold climates.

MAG 1 HYDRAULIC JACK OIL

MAG 1 Hydraulic Jack Oil is formulated with oxidation stable base oils, rust inhibitors, anti-wear agents and anti-foam agents to provide protection for hydraulic jack and lift equipment.

| PACK SIZES | Pack Size | Product # |
|---------------------|--------------|-----------|
| | 6/1 Quart | 69258 |
| Bar & Chain* | 3/1 Gallon | 62456 |
| | 2/2.5 Gallon | 60629 |
| | 55 Gallon | 62458 |
| | 6/1 Quart | 65979 |
| Snow Plow Hydraulic | 6/1 Quart | 65979 |
| | 2/2.5 Gallon | 00672 |
| Vacuum Pump ISO 68* | 2/2.5 Gallon | 00622 |
| | 5 Gallon | 00625 |
| | 55 Gallon | 00628 |
| Drip Oil ISO 22* | 5 Gallon | 00625 |
| | 55 Gallon | 00628 |
| Hydraulic Jack Oil | 6/1 Quart | 00925 |

| CLAIMS | | Snow Plow Hydraulic | Vacuum Pump ISO 68 |
|--|------------|---------------------|--------------------|
| | ASTM D6158 | ● | ● |
| Bosch Rexroth | ○ | ○ | |
| Cincinnati/MAG IAS P-69 | | ○ | |
| Cincinnati/MAG IAS P-70 | ○ | | |
| DIN 51524, Part 1, 2, 3 | ○ | ○ | |
| Eaton E-FDGN-TB002-E, 35VQ25A | ● | ● | |
| General Motors LS-2 | ○ | ○ | |
| JCMAS HK | ○ | ○ | |
| Parker Denison HF-0, HF-1 | ○ | ○ | |
| Parker Denison HF-2 | ○ | ○ | |
| Racine | ○ | ○ | |
| Sperry Vickers/Eaton I-286-S, M-2950-S | ○ | ○ | |
| US Steel 127, 136 | ○ | ○ | |

● = Meets Requirements ○ = Suitable for Use

| TYPICAL PHYSICAL PROPERTIES | | | | | | |
|----------------------------------|-------------|---------------|---------------------|--------------------|-----------------|--------------------|
| Properties | Test Method | Bar & Chain | Snow Plow Hydraulic | Vacuum Pump ISO 68 | Drip Oil ISO 22 | Hydraulic Jack Oil |
| Color | ASTM D1500 | 6 | Blue | 1 | 0.5 | 1 |
| Flash Point °C | ASTM D92 | 221 | 225 | 228 | 207 | 210 |
| Flash Point °F | ASTM D92 | 430 | 437 | 442 | 405 | 410 |
| Gravity, °API | ASTM D287 | 33.26 | 37.17 | 30.71 | 33.84 | 32.54 |
| Oxidation Hours | ASTM D943 | - | 6,000 | 5,000 | - | 5,000 |
| Phosphorus, wt. % | ASTM D5185 | - | 0.034 | 0.034 | - | - |
| Pour Point °C (°F) | ASTM D5950 | -45°C (-49°F) | -46°C (-51°F) | -30°C (-22°F) | - | -39°C (-38°F) |
| Specific Gravity @ 60°F (15.6°C) | ASTM D4052 | 0.8588 | 0.8389 | 0.8723 | 0.8558 | 0.8626 |
| Sulfur, wt. % | ASTM D4951 | - | 0.071 | 0.071 | - | 0.071 |
| Viscosity @ 100°C cSt | ASTM D445 | 11.15 | 4.36 | 8.95 | 4.373 | 5.444 |
| Viscosity @ 40°C cSt | ASTM D445 | 66.51 | 20.53 | 69.25 | 22.13 | 31.71 |
| Viscosity Index | ASTM D2270 | 161 | 122 | 103 | 105 | 107 |
| Zinc, wt. % | ASTM D5185 | - | 0.043 | 0.043 | - | 0.043 |

*Available in Bulk



Evolutionary Performance™

MAG 1® motor oils, lubricants and chemicals are designed to keep pace with today's engine demands, requiring lighter viscosities and increased power densities. It's the only brand with FMX® Technology System, which meets the difficult challenges of effectively balancing performance, strength and durability.

THE MEANING OF EVOLUTIONARY PERFORMANCE™

Today's engines, machinery and equipment are evolving rapidly as OEMs push for more power density, lighter viscosity oil and increased fuel or fluid efficiency. MAG 1 is leading the way in this new evolution, based on the science of advanced additives and powerful molecular structures. It's all part of our exclusive FMX Technology System that boosts performance on many levels under the most severe operating conditions.

It means, despite lower viscosities, MAG 1 still delivers extraordinary performance, strength and durability, in every grade. Even the thinnest MAG 1 oils and fluids perform better than thicker oils of the past.

MAG 1 engine oils and lubricants are chemically formulated to deliver a higher level of performance that rises to the challenge of ever-increasing demands and developments by automotive, heavy duty truck and industrial equipment manufacturers.



PERFORMANCE

MAG 1 delivers unsurpassed protection to control friction and wear well beyond standard industry requirements. It can also help extend engine life and improve the performance of all types of vehicles, trucks, machinery, and equipment.



STRENGTH

MAG 1 is bolstered by FMX Technology, which provides a very strong oil film that shields engines, parts and machinery at multiple points of contact and fights friction between rotating parts.



DURABILITY

MAG 1 protects as well on the last day as it does on the first. Even under the most extreme operating conditions, it retains viscosity and withstands heat and shearing.



EXTREME CONDITIONS

With a powerful, molecular-reinforced formulation, MAG 1 reduces engine and equipment stresses from high heat, cold starts, heavy loads, steep inclines, dusty roads, power density, and more.

WELL-EARNED REPUTATION

MAG 1 is the brand to trust no matter what kind of vehicle you drive or equipment you operate. Manufactured in the U.S.A. by one of the world's leading suppliers of lubricants and automotive chemicals, its solid reputation and record of performance over many years is a testament to the consistent, dependable quality of every MAG 1 product.



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