



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 LOW VISCOSITY TRACTOR TRANS HYDRAULIC FLUID

MAG 1 Low-Viscosity Tractor Trans-Hydraulic Fluid meets the performance requirements of John Deere® J-20D for hydraulic and hydrostatic systems. Provides outstanding cold weather performance. Can be used in place of Universal Tractor Hydraulic Fluid.

MAG 1 FORD HYDRAULIC TRANSMISSION SAE 90

Recommended for use in final drives, hydraulic systems and manual transmissions of Ford Tractors manufactured between 1939 and 1952 where a SAE 90 fluid that meets API Service GL-1 is specified.

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 #
Universal Tractor Trans-Hydraulic Fluid*	3/1 Gallon	60681	TO-4 Torque Fluid SAE 10*	5 Gallon	66064
	2/2.5 Gallon	00522		55 Gallon	66065
	5 Gallon	00525		330 Gallon	65584
	55 Gallon	62863		5 Gallon	65845
Low-Viscosity Tractor Trans-Hydraulic Fluid*	330 Gallon	65576	TO-4 Torque Fluid SAE 30*	55 Gallon	62858
	5 Gallon	67154		330 Gallon	65585
Ford Hydraulic Transmission SAE 90*	5 Gallon	67154	TO-4 Torque Fluid SAE 50*	5 Gallon	65846
	2/2.5 Gallon	00342		55 Gallon	65848
Hydrostatic MV ISO 46*	3/1 Gallon	63952		330 Gallon	66366

TYPICAL PHYSICAL PROPERTIES

Properties	Method	Universal Tractor Trans-Hydraulic Fluid	Low-Viscosity Tractor Trans-Hydraulic Fluid	Ford Hydraulic Transmission SAE 90	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	15,500	-	-	-	-	-
Calcium, wt. %	ASTM D5185	6.334	0.334	-	0.003	0.242	0.242	0.242
Color	ASTM D1500	1.5	Purple	5.0	0.5	2.0	5.0	8.0
Flash Point °C	ASTM D92	224	224	225	210	210	216	218
Flash Point °F	ASTM D92	435	435	437	410	410	420	425
Gravity, °API	ASTM D287	32.54	30.53	22.76	31.50	30.75	27.74	26.97
Oxidation Hours	ASTM D943	-	-	-	5000	-	-	-
Phosphorus, wt. %	ASTM D5185	0.13	0.13	-	0.033	0.092	0.092	0.092
Pour Point °C (°F)	ASTM D5950	-42°C (-44°F)	-54°C (-65°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	0.8733	0.9173	0.8681	0.8721	0.8886	0.8929
Viscosity @ 100°C cSt	ASTM D445	9.322	7.801	15.31	7.72	6.929	11.87	19.45
Viscosity @ 40°C cSt	ASTM D445	55.13	36	145.7	43.93	43.25	106.6	212.6
Viscosity Index	ASTM D2270	152	196	48	146	118	100	104
Zinc, wt. %	ASTM D5185	0.139	0.139	-	0.041	0.11	0.11	0.11

*Available in Bulk



Evolutionary Performance™

FMX® TECHNOLOGY **FRICTION MANAGEMENT FOR XTREME PROTECTION**

CLAIMS

	Universal Tractor Trans-Hydraulic Fluid	Low-Viscosity Tractor Trans-Hydraulic Fluid	Ford Hydraulic Transmission SAE 90	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	○	○					
API SA			●				
Bosch Rexroth				○			
Case JIC 144, 145	○	○					
Case MS-1209, 1210, 1207, 1204	○	○					
CAT TDTO					○	○	○
CAT TO-2	○	○			○		○
CAT TO-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	Low-Viscosity Tractor Trans-Hydraulic Fluid	Ford Hydraulic Transmission SAE 90	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					●	●	

● = Meets Requirements ○ = Suitable for Use



Evolutionary Performance™

FMX TECHNOLOGY **FRICITION 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.

PACK SIZES

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

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
Color	ASTM D1500	6	Blue	1	0.5
Flash Point °C	ASTM D92	221	225	228	207
Flash Point °F	ASTM D92	430	437	442	405
Gravity, °API	ASTM D287	33.26	37.17	30.71	33.84
Oxidation Hours	ASTM D943	-	6,000	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)	-
Specific Gravity @ 60°F (15.6°C)	ASTM D4052	0.8588	0.8389	0.8723	0.8558
Sulfur, wt. %	ASTM D4951	-	0.071	0.071	-
Viscosity @ 100°C cSt	ASTM D445	11.15	4.36	8.95	4.373
Viscosity @ 40°C cSt	ASTM D445	66.51	20.53	69.25	22.13
Viscosity Index	ASTM D2270	161	122	103	105
Zinc, wt. %	ASTM D5185	-	0.043	0.043	-



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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