

# I CHOSE A BRAND THATS LOOKS LIKE ME, I CHOSE HAFA 77

# GENERAL MAINTENANCE

Industry is constantly evolving: the sophistication of machinery, the importance of energy costs and the constant search for optimised productivity make the choice of lubricants a truly strategic decision.

In this context, industrial maintenance is more than just keeping production equipment in good condition, it is a major player in improving the quality of production management in companies. Our technical teams, made up

of sales representatives, application managers and chemists, provide you with day-to-day support in the field and advise you on the deployment of solutions tailored to your manufacturing processes. Our catalogue makes us

your preferred supplier for all your lubrication needs: hydraulic systems, gears, bearings, gearboxes, compressors and pneumatic equipment.

Our range of WOMAC products is designed to ensure optimum, long-lasting operation of all the components in your equipment.





**2023 EDITION** 

#### FLUIDES HYDRAULIQUES

A vital component of your systems par excellence, a wise choice of hydraulic fluid will ensure the durability of your machines and optimise your systems efficiency. By protecting them from corrosion, reducing wear or minimising the formation of residues, whatever the conditions of use, our WOMAC HYDROL fluids meet all your requirements.



Designation	Base oil	Grade	Application	Specification	Root code
HV HYDRAULIC FLU	JIDS: HIGH \	/ISCOSI	TY INDEX - FOR HIGH TEMPERATURES AND	PRESSURES	
		32	WOMAC HYDROL HV are high viscosity index hydraulic oils recommended for industrial or mobile hydraulic power		50
WOMAC HYDROL HV	Mineral	46	units requiring HV type oil. They are specially designed for hydraulic systems operating in a wide range of temperatures where cold starts are frequent. Thanks to their zinc-based	AFNOR NF E 48 603 HV ISO 6743-4 HV	78
		68	anti-wear additive, they can be used in systems operating under normal conditions.		139
		15			1490
		22	WOMAC HYDROL HV HFO are high viscosity index hydraulic oils, recommended for industrial or mobile hydraulic units operating outdoors and requiring an HV or HVLP type oil.	AFNOR NF E 48 603 HV	37
WOMAC	Mineral	32	They are specially designed for hydraulic systems operating over a wide temperature range, where cold starts and high	ISO 6743-4 HV DIN 51524-3 HVLP	2255
HYDROL HV HFO		46	operating temperatures are frequent. WOMAC HYDROL HV HFOs offer superior performance in terms of filterability and wear resistance thanks to a formulation based on highly	ISO 11158 HV PARKER HF-0, HF-2 Eaton Vickers I.286 S	2394
		68	refined new mineral base oils and stabilised zinc-based additives.		2281
		100			992
WOMAC HYDROL HV NAS		32	Formulated from new, highly refined group I mineral base oils, WOMAC HYDROL HV NAS oils are HV or HVLP hydraulic oils with low particulate contamination thanks to their passage through a filtration loop. The presence of solid	AFNOR NF E 48 603 HV	2689
G A R A N T I E CLASSE NAS 5 7	Mineral	46	particles (metal, dust, etc.) is reduced, thus guaranteeing a cleanliness level of less than or equal to NAS class 7. WOMAC HYDROL HV NAS oils are specially designed for high-precision hydraulic systems requiring filtered oil. They are recommended for lubricating the hydraulic circuits of precision machines equipped with proportional and servovalve controls, such as machine tools, injection moul- ding machines process and other fived or mobile againment	ISO 6743-4 HV DIN 51524-3 HVLP ISO 11158 HV PARKER HF-0, HF-2 Eaton Vickers I.286 S	2690
(50 4406 <u>s</u> 18/16/13		68			2691
WOMAC HYDROL HV 46 C	Mineral	46	WOMAC HYDROL HV 46 C has been specially designed for use in all hydraulic systems subject to temperature variations. WOMAC HYDROL HV 46 C is suitable for the lubrication of Civil engineering or agricultural equipment as well as any hydraulic system where an HV 46 fluid is required. WOMAC HYDROL HV 46 C is a hydraulic oil with stabilised zinc additives that protect against wear. Its green colour makes it easy to detect the slightest leak.	AFNOR NF E 48 603 HV ISO 6743-4 HV	1863
WOMAC HYDROL HV 46 PO	Mineral	46	WOMAC HYDROL HV 46 PO is an anti-wear hydraulic fluid with a high viscosity index, specially developed to meet the requirements of certain equipment operating under severe temperature and pressure conditions. WOMAC HYDROL HV 46 PO is particularly suited to the lubrication of POCLAIN, RICHIER, PINGON equipment and any hydraulic system for agricultural or Civil engineering equipment where a high performance ISO HV 46 grade fluid is required. WOMAC HYDROL HV 46 PO is a high performance oil with excellent resistance to oxidation, enabling stable performance to be maintained over extended periods of use.	AFNOR NF E 48 603 HV DIN 51524-3 HVLP ISO 6743-4 HV	38

Current packaging\* :

1L 2L 5L 20L 60L 215L 1000L VRAC

WOMAC HYDROL HVI 46	Mineral	46	WOMAC HYDROL HVI 46 is an anti-wear hydraulic fluid with a specific viscosity improver additive that enables it to be used in extreme temperature conditions or for systems working at high pressures. Thanks to its viscosity index of 180, WOMAC HYDROL HVI 46 is suitable for all heavily loaded hydraulic systems subject to wide temperature variations. WOMAC HYDROL HVI 46 is suitable for a wide range of applications, including Civil engineering, forestry, agricultural and industrial machinery.	NF E 48 603 HV ISO 6743-4 HV DIN 51524-3 HVLP ISO 11158 HV Eaton 35 VQ 25 Eaton 104C	1974
WOMAC HYDROL HV PLUS 46	Mineral	46	WOMAC HYDROL HV PLUS 46 is an anti-wear hydraulic fluid with a specific viscosity improver additive that enables it to be used in extreme temperature conditions. Thanks to its viscosity index of 220, WOMAC HYDROL HV PLUS 46 is suitable for all heavily loaded hydraulic systems subject to wide temperature variations. WOMAC HYDROL HV PLUS 46 is suitable for a wide range of applications, including Civil engineering, forestry, agricultural and industrial machinery.	DIN 51524-3 HVLP AFNOR NF E 48 603 HV ISO 6743-4 HV Eaton I-286S	380
		15	WOMAC HYDROL HV ZF are zinc-free hydraulic fluids	DIN 51524 part 3 HVLP	613
WOMAC		22	formulated to meet the technical requirements of hydraulic systems operating in severe conditions, particularly with high	Denison HF-0, HF-1; HF-2 ISO 6743-4 HV Vickers I-286-S	496
HYDROL HV ZF	Mineral	32	temperatures and pressures. WOMAC HYDROL HV ZF oils provide efficient lubrication of hydraulic circuits in precision machines equipped with proportional and servovalve	VICKERS I-286-5 ISO 11158 HV Vickers M-2950-S	430
		46	controls, such as machine tools, injection moulding machines, presses and other fixed or mobile equipment.	General Motor LS-2 Bosch Rexroth RE90220	231
WOMAC HYDROL HV ZF NAS		68 32	Formulated from highly refined new mineral base oils of Group I, WOMAC HYDROL HV ZF NAS 68 is a hydraulic oil of the HV or HVLP type designed to have low particulate contamination through a filtration loop. The presence	DIN 51524 part 3 HVLP	468 2695
GARANTIE	Mineral 46	46	<ul> <li>of solid particles (metallic, dust, etc.) is reduced, ensuring a cleanliness level lower or equal to NAS 7 class. It is a zinc-free hydraulic fluid, developed to meet the technical requirements of hydraulic systems operating under severe conditions, including high temperatures and pressures. They provide efficient lubrication for hydraulic circuits in precision</li> </ul>	Denison HF-0, HF-1; HF-2 ISO 6743-4 HV Vickers I-286-S ISO 11158 HV Vickers M-2950-S	2696
CLASSE MAS 57 ISO 4406 510/16/13			68	machines equipped with proportional controls and servovalves, such as machine tools, injection molding machines, presses, and other stationary or mobile equipment that requires filtered oil. They can also be used for servo motor and control system lubrication, as well as oil mist lubrication.	General Motor LS-2 Bosch Rexroth RE90220
WOMAC HYDROL HV XLT 15	Mineral	15	WOMAC HYDROL HV XLT 15 is a hydraulic fluid developed for heavy-duty hydrostatic circuits operating at high pressures and extreme temperatures, particularly at very low temperatures. WOMAC HYDROL HV XLT 15 is also used in hydraulic systems equipped with vane pumps and piston pumps in industry, as well as on forestry, Civil engineering and extrication equipment.	-	640
WOMAC HYDROL HVLPD 46	Mineral	46	WOMAC HYDROL HVLPD, ISO VG 46 viscosity, is a detergent ash-free, anti-wear hydraulic oil with a high viscosity index. WOMAC HYDROL HVLPD is particularly recommended for systems subject to temperature variations and in harsh environments where the presence of water is unavoidable. WOMAC HYDROL HVLPD is used in the hydraulic systems of Civil engineering machinery or telescopic forklift-trucks where the manufacturer recommends a detergent hydraulic oil.	DIN 51524-3 HVLPD	2055
WOMAC HYDROL HV LL 46	Mineral	46	WOMAC HYDROL HV LL 46 is an anti-wear hydraulic fluid with a high viscosity index, formulated with group II base oils to extend equipment maintenance intervals by resisting thermal and chemical degradation. WOMAC HYDROL HV LL 46 is designed to meet the needs of hydraulic systems in industrial or mobile equipment subject to wide temperature variations. WOMAC HYDROL HV LL 46 is also suitable for hydraulic systems requiring a high degree of load or operating at high pressure.	DIN 51524-3 HVLP ISO 1158 HV ASTM D6158 HV Parker Denison HF-0 , HF-1 ,HF-2 Fives Cincinnati P-70	2541
WOMAC HYDROL HV LL NAS 46	Mineral	46	WOMAC HYDROL HV LL 46 is an anti-wear hydraulic fluid with a high viscosity index, formulated with group II base oils to extend equipment maintenance intervals by resisting thermal and chemical degradation. WOMAC HYDROL HV LL NAS 46 has low particulate contamination. The presence of solid particles (metal, dust, etc.) is reduced, thus guaranteeing a cleanliness level of less than or equal to NAS class 7.	DIN 51524-3 HVLP ISO 1158 HV ASTM D6158 HV Parker Denison HF-0 , HF-1 ,HF-2 Fives Cincinnati P-70	2692

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Designation	Base oil	Grade	Application	Specification	Root code		
M HYDRAULIC FL	UIDS: TEMP	ERATURI	E NORMALS				
		32	WOMAC HYDROL HM are hydraulic fluids with a natural viscosity index, specially adapted for fixed or mobile		227		
WOMAC HYDROL HM	Mineral	46	hydraulic systems requiring HM or HLP type anti-wear hydraulic oil. They can also be used to lubricate movements	AFNOR NF E 48 603 HM ISO 11158 HM ISO 6743-4 HM	228		
		68	by circulation or splashing (bearings, various movements, etc.).	MIT +-C+10 OCI	229		
		15			213		
		22	WOMAC HYDROL HM HFO are HM or HLP type anti-wear		214		
		32	hydraulic oils designed for the lubrication of hydraulic	AFNOR NF E 48 603 HM	258		
		46	circuits in industrial or mobile equipment. They are designed to operate under normal conditions, particularly with regard	ISO 6743-4 HM DIN 51524 part 2 HLP	239		
WOMAC HYDROL HM HFO	Mineral	68	to operating temperature and hydraulic circuit pressure. These products are formulated from highly refined new	ISO 11158 HM PARKER HF-0, HF-2	2582		
		100	mineral base oils and stabilised zinc-based additives, giving them excellent wear protection and remarkable filterability.	Cincinnati Lamb P- Eaton 104C vane pump test	230		
		150	They can also be used to lubricate movements by circulation or splashing (bearings, various movements, etc.).	Eaton 35VQ25	176		
		220		177			
		320			178		
WOMAC	Mineral	Minoral	Mineral	46	WOMAC HYDROL HM ZF are zinc-free hydraulic fluids formulated to meet the requirements of hydraulic circuits in precision machines equipped with proportional and servovalve controls such as machine tools, injection moulding machines, presses and other fixed or mobile	DIN 51524 part 2 HLP Cincinnati Lamb P ISO 6743-4 HM Vickers I-286-S ISO 11158 HM	1238
HYDROL HM ZF		<ul> <li>equipment. They can also be used to lubricate movements by circulation or splashing (bearings, various movements, etc.). or splashing (bearings, various movements, etc.), as well as for lubricating servomotors and control systems, and for lubrication by oil mist.</li> </ul>	Vickers M-2950-S General Motor LS-2 Bosch Rexroth RE90220 Denison HF-0, HF-1; HF-2	1239			
WOMAC HYDROL HM NAS		32	Formulated from new, highly refined group I mineral base oils, WOMAC HYDROL HM NAS oils are HM or HLP hydraulic oils with low particulate contamination thanks to their pas- sage through a filtration loop. The presence of solid particles (metal, dust, etc.) is reduced, thus guaranteeing a cleanliness level of less than or equal to NAS class 7.	AFNOR NF E 48 603 HM ISO 6743-4 HM DIN 51524 part 2 HLP ISO 11158 HM PARKER HF-0, HF-2 Cincinnati Lamb P- Eaton 104C vane pump test Eaton 35VQ25	2686		
	Mineral	46			2687		
G A R A N TTE CLASSE NAS ≤ 7 ISO 4406 ≤ 18/16/13		68			2688		
WOMAC HYDROL HM ZF NAS		new, highly refined Grou	WOMAC HYDROL HM ZF NAS 46 oils are formulated from new, highly refined Group I mineral base oils and are HM or HLP type hydraulic oils with low particulate contamination	DIN 51524 part 2 HLP Cincinnati Lamb P ISO 6743-4 HM Vickers I-286-S	2693		
	Mineral 68	68	by passing through a filtration loop. The presence of solid particles (metal, dust, etc.) is reduced, thus guaranteeing a	ISO 11158 HM Vickers M-2950-S General Motor LS-2 Bosch Rexroth RE90220 Denison HF-0, HF-1; HF-2	2694		

# Theoilthat's **withstands** pressure

HAFA WOMAC HYDROL HM HFO 46

Designation	Base oil	Grade	Application	Spécification	Root code			
ECO-FRIENDLY HYDRAULIC FLUIDS								
WOMAC HYDROL AURAE HFC 46	Solution aqueous polyglycol		WOMAC HYDROL AURAE HFC 46 is a fire-resistant hydraulic fluid of the HFC type with ISO VG 46 viscosity, formulated from an aqueous polyglycol solution. WOMAC HYDROL AURAE HFC 46 is recommended for hydraulic circuits close to heat sources and as a low flammability hydraulic fluid. WOMAC HYDROL AURAE HFC 46 is used for hydraulic handling systems in the steel industry, furnace mechanisms, forge hydraulic presses, plastic injection presses, hydraulic lifts, It also has a wide range of applications in coal mines, the steel industry, foundries, etc.	ISO 12922 HFC	2404			
WOMAC	Vegetable	32	WOMAC HYDROL AURAE VEG is a category of lubricants produced from vegetable oils and adapted to the lubrication of hydraulic circuits. These products are more environmentally friendly and minimise the impact of pollution on natural environments. They are recommended for all applications	ISO 15380 Catégorie HETG	2406			
HYDROL AURAE VEG	46		where oil leaks are likely to pollute the water table or other aqueous environments, such as water treatment plants	VDMA 24568 Catégorie HETG	2407			
	Synthetic esters unsaturated	unsaturated <sup>40</sup> is likely to pollute the environment. They are used in the		2391				
WOMAC HYDROL AURAE HEES			recommended where the risk of leakage or loss of lubricant	DIN 51502 EL ISO 15380 ISO 6743-4 Catégorie HEES	2390			
		68	sports resorts, golf courses, etc.	5	1560			
	Synthetic esters saturated	32	<ul> <li>WOMAC HYDROL AURAE SAT are high-quality hydraulic fluids developed from saturated esters. Because of their content of raw materials derived from renewable bases, WOMAC HYDROL AURAE SAT oils are products that contribute to the protection and preservation of our environment. These products are recommended for all applications where oil leaks are likely to pollute the water table or other aqueous environments and can be used in all fixed and on-board equipment, in the field of sand and gravel quarries, forestry, river navigation, Civil engineering, winter sports resorts, etc.</li> </ul>	ISO 15380 ISO 6743-4 HEES	2402			
WOMAC HYDROL AURAE SAT				ISO 15380 ISO 6743-4 HEES DIN 5102-EL	2578			
		68		ISO 15380 VDMA 24568 Catégorie HEES	2403			
WOMAC HYDROL AURAE SAT 46 ECOLABEL	Synthetic esters saturated		WOMAC HYDROL AURAE SAT 46 is a high quality hydraulic fluid, developed from saturated esters, allowing extended intervals. Thanks to its content of raw materials from renewable sources, WOMAC HYDROL AURAE SAT 46 is a product that contributes to the protection and preservation of our environment, and is certified European Ecolabel* compliant. It is recommended for all applications where oil leaks are likely to pollute the water table or other aqueous environments and can be used in all fixed and on-board equipment, in the field of sand and gravel quarries, forestry, river navigation, Civil engineering, winter sports resorts, etc.	ISO 15380 VDMA 24568 Catégorie HEES	2389			



JRAE

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#### **HAFA COMMITS**

Because the environment is everyone's concern, HAFA has been committed for over 20 years to offering its customers environmentally-friendly lubricants. The AURAE label was born out of the desire to highlight these products and make it easier to identify them within the various ranges in the catalogue. The AURAE label covers all products described as eco-responsible:

- Biodegradable products that have no harmful effect on the environment when the decompose.
- Products of natural origin which, in our trade, are made up of products based on vegetable • oils or esters and are therefore, in essence, less polluting.
- Products whose composition prevents the planet's natural resources from being depleted. In this category we will find products that have been developed as part of the circular economy and those that have received Ecolabel certification for their eco-responsible packaging as well as their biodegradable properties.



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\* According to the OECD 301B standard, a substance is considered biodegradable when it reaches a biodegradability threshold of >60% within 28 days.

#### INDUSTRIAL GEAR OILS

Machine gears must be protected against wear and corrosion to prevent breakdowns and extend their life. Our WOMAC GEAR lubricants have been developed to protect your gears even in extreme conditions, taking into account all the parameters specific to your environment: load levels, recurrence of shocks and vibrations, temperature range, maintenance conditions and environmental impact.



Designation	Base oil	Grade	Application	Specification	Root code				
MINERAL GEAR OILS									
		46			202				
		68			203				
		100	<ul> <li>WOMAC GEAR are mineral oils specially designed for the lubrication of gearboxes operating under severe conditions: parallel axis cylindrical gears, loaded bearings and couplings, worm and wheel reducers. They are designed for use in the industrial gears of conveyors, agitators, dryers, extruders, fans, mixers, presses, etc. They are also used in the marine sector, in deck machinery such as winches, rotating gears and pumps, and in Civil engineering and agriculture.</li> <li>BOIN 51 517 Part 3 CLP ISO 6743-6 CKC/CKD AISE 224</li> <li>AGMA 9005-F16 DAVID BROWN S1.53.101 (E)</li> </ul>		204				
		150			205				
WOMAC GEAR	Mineral	220		AGMA 9005-F16	297				
		320			379				
		460		2	486				
		680			287				
		1000			1551				

#### SYNTHETIC GEAR OILS

		68			289
		150	WOMAC GEAR S are PAO-based lubricants, suitable for the lubrication of industrial gears offering high resistance to	DIN 51517 PART 3 CLP	321
WOMAC	Synthetic	220	micro-pitting. They are recommended for industrial gearboxes operating under severe conditions such as high	AGMA 9005-F16 AS ISO 12925-1 CKC/CKD	184
GEAR S	PAO	320	loads, very low or high temperatures and wide temperature ranges. WOMAC GEAR S are also used for	US STEEL 224 Fives Cincinnati	290
		460	lubricating bearings and other components in circulating oil or splash lubrication systems.	GM LS-2 EP	183
		680			456
		150	WOMAC GEAR PAG are synthetic lubricants formulated from polyglycol (PAG) bases for gears and gearboxes operating		314
WOMAC	Synthetic	under severe operating conditions. WOMAC GEAR PAG oils are ideally suited to the lubrication of bearings, gears and other couplings operating at high temperatures, such as fur-	DIN 51502 CLP-PG ISO 12925-1 CKT	463	
GEAR PAG	PAG	320	naces and machinery for the manufacture of glass, plastic materials, ceramics, paper and wood pulp machines, etc. They are particularly recommended for worm gears. They are equally well suited to use in the mechanical industry, hydro-electric power stations and public works and agricultural equipment.	ISO 12925-1 CKE ANSI / AGMA 9005-E02 464 465	464
		460			465

#### **ECO-FRIENDLY GEAR OILS**

WOMAC	Synthetic esters	150	WOMAC GEAR AURAE are low environmental impact gear oils based on saturated synthetic esters, designed for all types of gears for which a CLP DIN 51517 type oil is required. They are designed for the lubrication of spur gears, bevel	DIN 51517 Part 3 CLP	2408
GEAR AURAE	saturated	220	gears and planetary gears operating under high loads and in areas likely to cause environmental pollution as a result of leaks. They are also ideal for lubricating chains and wire ropes.	DIN 3131/ Part 3 CFL	2409

#### OILS FOR AIR COMPRESSORS, VACUUM PUMPS AND PNEUMATIC TOOLS

Rotary screw, piston, vane and reciprocating compressors, vacuum pumps and pneumatic tools all have a major role in energy transfer and are generally subjected to intensive conditions of use. The role of lubrication for this type of equipment is to protect it from wear and oxidation, prevent the formation of foam and carbon deposits and withstand extreme temperatures while guaranteeing long drain intervals. Our WOMAC COMP lubricants have been specifically developed in compliance with manufacturers' requirements and in response to all conditions of use.

Designation	Base oil	Grade	Application	Specification	Root code				
PNEUMATIC TOOLS									
WOMAC AIR		22	WOMAC AIR are lubricants based on mineral oils and specific additives specially designed for the internal lubrication of		2411				
	Mineral	46 pneumatic equipment such as hammer drills, pick hammers, riveters, drills, rock drills, compressed air motors, etc. WOMAC AIR oils enable the lubrication of pneumatic percussion or	-	226					
		100	rotation tools in the most severe conditions of use, even in the presence of water.		111				

#### **COMPRESSORS / REFRIGERATION COMPRESSORS**

		32	WOMAC AIR COMP are synthetic-based, ashless lubricants		195
		46	for lubricating air compressors. The oils are specifically designed for the lubrication of rotary screw or reciprocating		196
WOMAC AIR COMP	Semi- synthetic	68	piston air compressors under normal operating conditions. Formulated from synthetic and mineral base oils and	DIN 51 506 : VDL ISO 6743/3A classe L-DAB / DAH	197
		100	carefully selected additives, they ensure compressor reliability and protection.		198
		150			199
		32	WOMAC AIR COMPS are high performance lubricants formulated		1272
WOMAC	Synthetic	46	on a synthetic base with a specific zinc-free and ash-free additive. WOMAC AIR COMP S oils are designed for the lubrication of rotary screw air compressors in severe service.	DIN 51 506 : VDL	185
AIR COMP S	Synthetic	68	They allow extended drain intervals, providing better long- term performance, particularly at high operating tempera-	ISO 6743/3A classe L-DAB / DAH	186
		100	tures.		187
	Synthetic	32	WOMAC AIR COMP SL are synthetic lubricants based on the latest technology and designed to lubricate screw, vane and piston air compressors. WOMAC AIR COMP SL oils are particularly recommended for heavily loaded compressors, with high temperature rises and intensive operating conditions. They allow drain intervals 3 to 4 times greater than a conventional lubricant, with analytical monitoring of the oil in service.		490
		46		DIN 51506 : VDL ISO 6743-3A classe L-DAC / DAJ	189
WOMAC AIR COMP SL		68			190
		100			396
		150			221
		46	WOMAC AIR COMP XLT are synthetic alkylbenzene-based lubricants for refrigeration compressors using ammonia, CFC or HCFC refrigerants. WOMAC AIR COMP XLT oils are recommended for screw or piston refrigeration compressors in domestic, commercial or industrial	-	100
WOMAC AIR COMP XLT	Synthetic Alkylbenzène	68			101
		100	applications. They provide optimum lubrication even under the most severe conditions.		102
WOMAC AIR COMP XLT M 68	Mineral	68	WOMAC SPECIAL XLT M 68 is an oil designed for refrigeration compressors using ammonia refrigerant (R717). WOMAC SPECIAL XLT M 68 is recommended for open, semi-open or hermetic compressors in domestic, commercial or industrial applications. WOMAC SPECIAL XLT M 68, formulated from paraffinic base oils, can be used in rotary or reciprocating compressors.	DIN 51503 KAA DIN 51503 KE	103

Designation	Base oil	Grade	Application	Specification	Root code
VACUUM PUMPS					
WOMAC AIR COMP VP 100	Mineral	100	WOMAC AIR COMP VP 100 is the lubricant of choice for lubricating reciprocating and rotary vacuum pumps capable of achieving secondary vacuum levels for high vacuum. WOMAC AIR COMP VP 100 is formulated with mineral oils combined with special high-performance additives.	-	441

#### CIRCULATING OILS

Also known as movement oils, these oils are designed for the general maintenance of all machine tools such as spindles, slides, chains, bearings and roller bearings. The lubrication requirements for these machines mainly concern the ability to prevent friction and resistance to make movements more fluid. The WOMAC MOVE product range is able to meet every type of machine need by ensuring consistent and reliable lubrication, whatever the conditions of use.



Designation	Base oil	Grade	Application	Specification	Root code
		100	WOMAC MOVE CHAIN are lubricants made from mineral base oils and additivated with spinning agents to give them		457
		150	remarkable adhesion properties. WOMAC MOVE CHAIN are particularly recommended for		105
WOMAC MOVE CHAIN	Mineral	220	lubricating chains used in the industrial world, such as conveyor chains, transmission chains or lifting chains. WOMAC MOVE CHAIN are also suitable for general	-	292
		320	lubrication and total loss lubrication, particularly in applications requiring anti-spatter properties: reciprocating		293
		460	saws, weaving looms, printing machines, cardboard mill equipment, mechanography, etc.		388
WOMAC	50 Synthetic 250	50	WOMAC MOVE CHAIN S are designed for lubricating chains and bearings in installations operating at temperatures of up to 250°C. They are recommended for paint conveyors, textile stenter chains and tracks, chipboard production lines, oven chains and bearings, polymerisation tunnels, glass wool or plasterboard dryers, etc. They can also be used as a high-temperature movement oil, both in circulation and as a total loss oil.		1260
MOVE CHAIN S		250		-	1261
		2	WOMAC MOVE SPIN are oils for lubricating the high-speed	ISO/TR 3498 FD 2	484
WOMAC	Mineral	5	spindles of machine tools for fubricating the high-speed spindles of machine tools, formulated from high-quality base oils and selected additives. WOMAC MOVE SPIN are also intended for lubricating the bearings and associated clutches of machine tools lubricated by circulation, oil bath or mist, or for lubricating precision grinding machines, lathes, pointing machines and plotter mechanisms. WOMAC MOVE SPIN are also suitable for hydraulic circuits or control or precision mechanisms requiring very fluid oils.		460
MOVE SPIN		10		ISO/TR 3498 FD 2 AFNOR NF E 48603 HM	461
		15			1022

Designation	Base oil	Grade	Application	Specification	Root code
		32			329
		68	WOMAC MOVE GLISS are oils specially designed for the lubrication of machine tool slides, tables and tools cart. The	ISO 11158 HG	117
WOMAC MOVE GLISS	Mineral	100	improved adhesion and stick slip characteristics give high friction performance on slides. WOMAC MOVE GLISS oils are	ISO 19378 GA & GB CINCINNATI MILACRON P-	499
MOVE GEI33		150	particularly recommended for high-precision, low-speed machine tools, and are suitable for both metal and plastic	SAE MS 1007 GM LS2 Way Oil / US Military AA59113	116
		220	or composite slides.	· · · · · · · · · · · · · · · · · · ·	294
		460			1347
		32		ISO 11158 HG	318
		46	WOMAC MOVE GLISS GRH oils are particularly recommended for the lubrication of guides and slides, even when heavily	ISO 19378 GA & GB SAE MS 1007	273
WOMAC MOVE GLISS GRH	Mineral	68	loaded and fitted with circulating or total loss lubrication systems. They can also be used as hydraulic fluids in all	DIN 51517 part III CLP	274
		100	machines, particularly grinding machines, where a single fluid is used to lubricate the slides and hydraulic controls.	GM LS2 Way Oil / US Military AA59113 DIN 51 524 part II HLP	1029
		150	····· , ····	CINCINNATI MILACRON P-	453
		32			1016
		46	WOMAC MOVE HH are motion oils designed for the		298
		68	lubrication of journal bearings, oil-lubricated bearings such as most sleeve bearings or lightly loaded roller bearings.		180
WOMAC	Mineral	100	WOMAC MOVE HH are designed for the general lubrication of components by circulation, oil bath or splash	NF E 48-603 : classe HH	181
MOVE HH	Minerat	150	lubrication. WOMAC MOVE HH are paraffinic-based mineral		182
		220	oils designed to offer excellent protection to most industrial applications using bearings or circulating oil not requiring anti-wear protection.		179
		320			452
		460			381
WOMAC MOVE GLISSOL 68	Mineral	68	WOMAC MOVE GLISSOL 68, based on an innovative chemistry, is specially designed for the lubrication of slides, hydraulic circuits and gearboxes with medium load housings. WOMAC MOVE GLISSOL 68 is designed for machine tool fleets, particularly those operating with soluble oils. WOMAC MOVE GLISSOL 68 is perfectly compatible with soluble machining lubricants. It ensures long bath life by preventing the development of bacteria through smothering.	NF E 60.200 Catégorie G NF E 60.203 Catégorie G & HG CINCINNATI MILACRON P-47	1262
		320			352
		460	WOMAC MOVE CYLINDER are high viscosity pure mineral oils designed for the lubrication of steam engine cylinders under saturated steam. WOMAC MOVE CYLINDER oils are		431
WOMAC MOVE CYLINDER	Mineral	400	also used for the lubrication of gearboxes and low-load or slow-running variators. WOMAC MOVE CYLINDER oils are	_	431
MOVE CILINDER		680	also designed for the lubrication of worm screws operating at moderate speeds and temperatures and for the lubrication		353
		1000	of heavy mechanics.		88
WOMAC MOVE AURAE	Synthetic esters	100	WOMAC MOVE AURAE 100 is a high performance ester based oil designed to offer excellent protection to most industrial applications using bearings or circulating oil not requiring anti-wear protection. WOMAC MOVE AURAE 100 is designed for the general lubrication of components by circulation, oil bath or splash lubrication. WOMAC MOVE AURAE 100 is particularly recommended where there is a risk of accidental environmental pollution.	-	2396

#### SPECIALTY FLUIDS

The WOMAC SPECIAL range offers a selection of special fluids designed to meet a variety of application needs. These fluids are used in fields such as the lubrication of delicate mechanisms and precision equipment, the release and demoulding of plastics and the thermal protection of textile yarns. With the special fluids in the WOMAC SPECIAL range, you benefit from reliable, high-performance solutions for a wide range of demanding applications.

Designation	Base oil	Grade	Application	Specification	Root code
WOMAC SPECIAL PENOIL PLUS	Mineral	-	WOMAC SPECIAL PENOIL PLUS is a multi-purpose product that acts as a degreaser, degreasing agent and lubricant. Thanks to its low viscosity, Womac Special Penoil Plus penetrates quickly and frees parts with increased efficiency. WOMAC SPECIAL PENOIL PLUS eliminates squeaking and repels moisture.	-	121
WOMAC SPECIAL WHITE	White oil	24	WOMAC SPECIAL WHITE are saturated white/paraffinic oils of very high purity, derived from selected and refined mineral oils. They are particularly recommended for the lubrication of delicate mechanisms and precision equipment such as those used in watchmaking, household appliances, bicycles, etc. WOMAC SPECIAL WHITE are chemically and biologically stable mineral oils that can be used in industry as components of detergents or cleaners. They are also suitable for the manufacture of candles, cleaning products, chemical lubricants, etc.	-	82
		70			83
WOMAC SPECIAL SILICONE	Silicone	-	WOMAC SPECIAL SILICONE is a linear-chain polydimethylsiloxane fluid with a wide range of applications, as a release agent, for the demoulding of plastics and foundry articles, as a lubricant and heat protection agent for textile yarns, and as a lubricant for plastics or elastomers on metal. WOMAC SPECIAL SILICONE is also used as a thermostatic fluid, as a dielectric fluid for impregnating paper for condensers and for the hydrophobic treatment of powdered materials or fibres.	-	222

#### DIELECTRIC OILS

Dielectric oils are insulating oils for transformers and electrical equipment. They insulate the protective parts from electrical currents and dissipate heat thanks to their cooling formulation. Our WOMAC VOLT oils meet the specific requirements imposed by high voltages while providing excellent protection for your transformers, guaranteeing a long, high-performance service life.

Designation	Base oil	Grade	Application	Specification	Root code
WOMAC SPECIAL VOLT	Mineral	-	WOMAC SPECIAL VOLT is a non-inhibited mineral insulating oil of naphthenic origin, specially treated for the lining of electrical transformers. WOMAC SPECIAL VOLT is also used in rheostats, circuit breakers and other electrical equipment where the oil acts as an insulator or heat transfer agent. Thanks to its dielectric properties, WOMAC SPECIAL VOLT can dissipate heat and suppress electric arcs.	IEC 60296 Ed.4 (2012)	98
WOMAC SPECIAL VOLT AURAE	Esters synthétiques		WOMAC SPECIAL VOLT AURAE is an eco-friendly dielectric fluid based on a high-performance synthetic ester. WOMAC SPECIAL VOLT AURAE is particularly recommended for use in electrical transformers, circuit breakers and applications where respect for the environment is paramount, such as wind turbine transformers. WOMAC SPECIAL VOLT AURAE is the best compromise for reconciling high-temperature ap- plications, fire safety and environmental problems.	IEC 61099	2397

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#### HEAT TRANSFER FLUIDS

Heat transfer fluids are heat transfer agents. Their role is to transport heat from one point to another. These fluids are used in a wide range of industries and applications, including domestic and industrial space heating, the chemical and wood industries, paper mills, plastics processing and industrial laundries. Whether used in open or closed circuits, they must have high thermal stability. WOMAC CAL products have been designed to meet the requirements of these processes. Whether mineral or synthetic oils, these high-performance products will ensure the protection and longevity of your machines.

Designation	Base oil	Grade	Application	Specification	Root code
WOMAC SPECIAL CAL	Mineral	32	WOMAC SPECIAL CAL are mineral heat transfer oils for use in industrial indirect heat transfer systems. WOMAC SPECIAL CAL oils are heat transfer fluids, recommended for use in installations such as: domestic and industrial space heating, heating by temperature exchange, manufacturing processes (in cement works, paper mills, wood industries, etc.), heating of thermal baths, etc.	- -	90
		46			91
		68			92
		100			102
WOMAC SPECIAL CAL S	Synthetic	-	WOMAC SPECIAL CAL S is a heat transfer fluid formulated on the basis of synthetic hydrocarbons with much greater thermal stability than mineral-based fluids. WOMAC SPECIAL CAL S is suitable for heat transfer installations using liquid phase heat transfer fluids. It is very thermally stable and can be used in industrial and heating applications where high performance is required.	-	384

#### FORM OILS

Form oil is a release agent designed to prevent concrete and laitance from sticking to the formwork. Thanks to their quality and ease of application, our WOMAC CONCRETE products will simplify the demoulding process while guaranteeing the quality of the concrete elements and the lifespan of the moulds and formwork.

Designation	Base oil	Grade	Application	Specification	Root code
WOMAC SPECIAL CONCRETE	Mineral		WOMAC SPECIAL CONCRETE is a ready-to-use form oil based on petroleum mineral oil designed for the concrete industry. WOMAC SPECIAL CONCRETE is designed to be applied to formwork surfaces to facilitate the stripping of concrete structures or concrete elements by reducing the adhesion between them. A specific formulation gives it exceptional demoulding properties. The active separation layer thus obtained makes it easy to demould dry concrete, even on complex moulds or with profiled shapes.	<u>-</u>	118
WOMAC SPECIAL CONCRETE AURAE	Esters		WOMAC SPECIAL CONCRETE AURAE is a ready-to-use, eco-responsible mould-release oil made from vegetable oil esters designed for the concrete industry. A specific formulation gives it exceptional mould-release properties. The active separation layer thus obtained makes it easy to demould dry concrete, even on complex moulds or with profiled shapes. The active separation layer obtained makes it easy to demould dry concrete, even on complex moulds or moulds with profiled shapes.	-	436



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