

Lubricants

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Lubrication schedule HA30/HA30A -HA45/HA45A

Complete instructions in section 7. Maintenance.

Pos.	Component Engine hours -->	1st service		Service interval						Min. once a year	VISCOSITY GRADE/ lubricant class
		100	500	8	40	500	1000	2000	4000		
	ENGINE										
1	Engine oil T2/T3/T4F			C		R					15W-40 API CI-4, ACEA E7
1	Engine oil StageV			C		R					5W-30 Scania LDF-4
2	Centrifugal cleaner			C		Cl					
3	Engine oil filter					R					
4	Fuel filter (2 - only T4F/Stage V)						R				
5	Coolant/cooling system			C				C	R	C/R*	40% Coolant
6	Water separator			D			R				
	ENGINE RELATED										
10	Air filter, outer element -Inner element: replace every 2 years					C/R*				Cl/R*	
11	Batteries (2)						C			C	
12	Fuel tank			C							
13	Urea tank			C							Only for - T4F / StageV
14	Urea filling/ventilation point					Cl					Only for - T4F / StageV
15	Urea filter						R				Only for - T4F / StageV
	TRANSMISSION										
20	Transmission oil			C			R**		R*	R**	ZF TE-ML 03M *- minimum once every two years ** - If use ZF TE-ML 03H
21	Filter (2)	R					R			R	
	DRIVE LINE										
30	Front differential oil		R			C		R		R	Universal axle and transmission oil ZF TE-MI 05F
31	Rear differential oil	R				C		R		R	SAE 75 W-90 MIL-L2105B / API GL 5
32	Tandem housing oil (2)	R				C		R		R	SAE 75 W-90 MIL-L2105B / API GL 5
33	Planetary hub (6)	R				C		R		R	SAE 75 W-90 MIL-L2105B / API GL 5
34	Separate brake cooling tank		R					R		R	ISO VG32 with 3-6% Lubrizol
35	Separate brake cooling filter		R				R			R	
	HYDRAULIC										
40	Hydraulic oil			C					R		ISO VG32
41	Breather element on tank						R				
42	Filter	R					R				
	LUBRICATION POINTS										
50	Fender hatches, bonnet (6 points)					L					NLGI 2
51	Cab hinges (2 points)					L					
52	Cardan shaft (2 points)					L-X					
53	Cardan shaft (2 points)					L-X					
55	Cardan shaft (2 points)					L-X					
56	Cardan shaft (2+2 points)					L-X					
58	Tilt support					L					
59	Lubrication unit				C						
	MISCELLANEOUS										
70	Cab ventilation filter, external				Cl/R*	C/R*					
80	Hydr. pump, tiltable cab						C				ISO VG15
100	Cab ventilation filter, internal				Cl/R*	R					
110	Receiver - dryer filter							R			
120	Refrigerant AC system								C/R*		R - 134a
130	Fast fill filter	C					C/R			C	Option

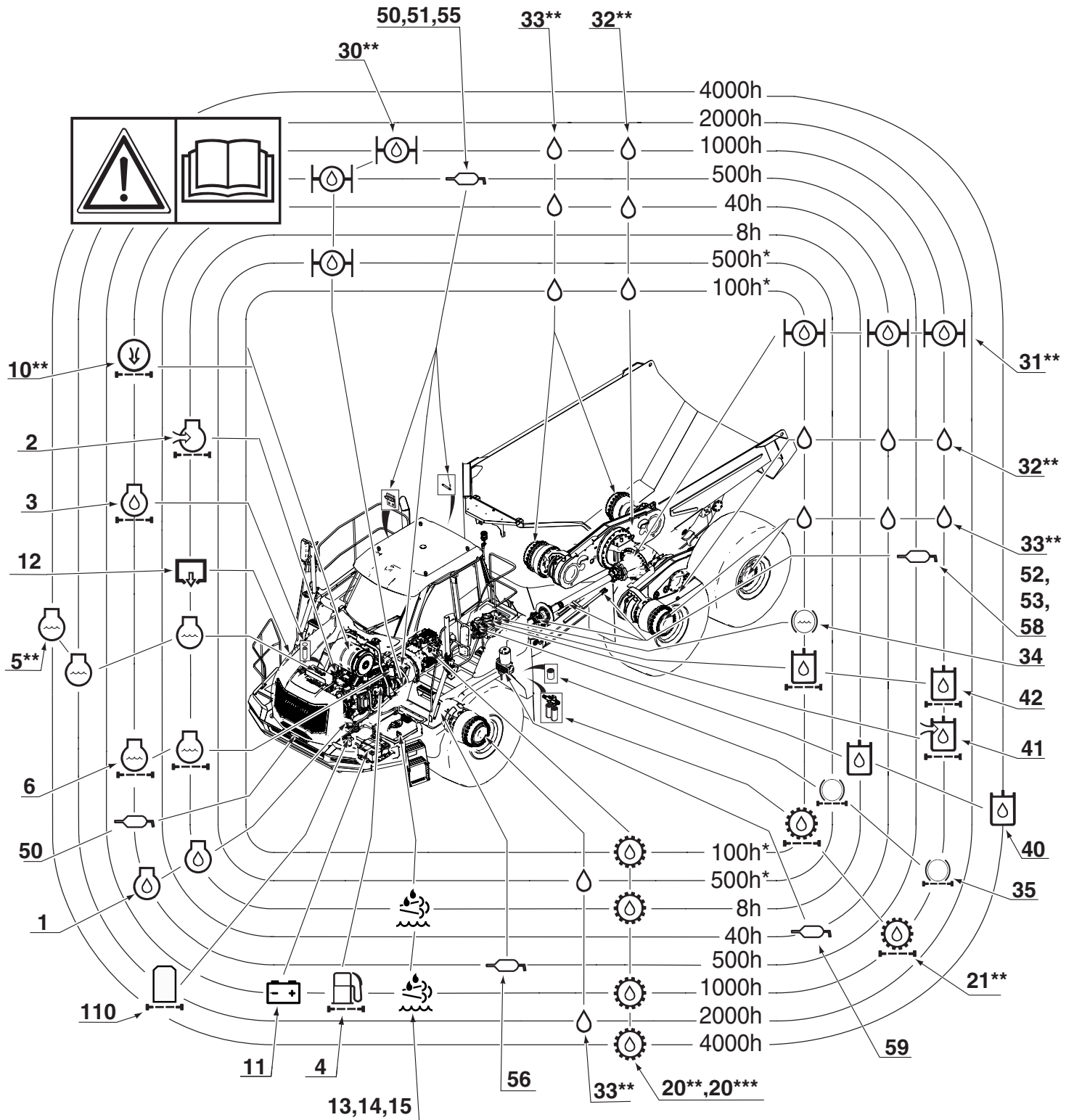
Not all items are shown in the illustration on the next page

R=Replace C=Check Cl=Clean L=Lubricate D=Drain *=or when required
L-X= Universal joints: Pump grease until it purges out of all spider bearing block seals.

Overview of oil and lubrication points HA30/HA30A -HA45/HA45A

The numbers refer to table on previous page.

Lubrication and Service Chart



*1st. service

**Min. once a year

***Min. once every two years

Oil specification sheet HA30/HA30A -HA45/HA45A

This table presents guidelines for oil, coolant, fuel, lubricants and other fluids best suited for good performance and long life.

Component	Kind of fluid	Ambient temperature												Remarks
		-40	-22	-4	14	32	50	68	86	104	122	°F	°C	
Engine oil pan	Engine oil T2/T3/T4													The engine oil should at least meet the requirements for one of the following oil classifications: - ACEA E5 and E7 - API CI-4 (For fuel with maximum 15ppm (0,0015%) sulphur content) - The Total Base Number (TBN) should be a minimum of 12-13 (ASTM 2896) If fuel contains more than 0.3% (weight) sulphur: Reduce the oil change interval with 50%. Make sure the oil can sustain all temperature variations up until next oil change. Ask your local Hyundai Dealer or oil supplier Doosan Engine oil API CI-4 & ACEA E7 10W-40
	Stage V													
Fuel Tank	Diesel fuel													Acc. to: ASTM and ISO standards Cetane number: min.49. Sulphur contents: max. 0.3%(weight) Max 2% isopropanol additive
Cooling system	Water + antifreeze													30-50% Nitrate-free glycol antifreeze is recommended. See 2000 hours service. Doosan Long- Life coolant
ZF transmission	ATF													When changing oil, it is recommended to run the transmission clutch calibration (AEB-tester). Only oils in the transmission oil list can be used ! NOTE: Min. 20 minutes warming up period in neutral position is required when ambient temperature is within this area:  Be aware about the oil class change will affecting the maintenance intervals.
Rear diff, Tandem housing and Hubs (6)	Gear oil with Limited-slip additives													According to: API GL-5 Only Oils with LS additives Hypoid – gear oil per MIL-L – 2105 B / API GL 5 Hypoid – gear oil in multi – range characteristic per MIL-L – 2105 C / D / API GL 5 SAE 90 or multi grade oils for normal external temperature SAE 75 W – 90; SAE 75 W – 85 for external temperature lower – 10°C SAE 140 or multi grade oils for external temperature over + 30°C
Brake cooling tank														Moderate climate : ISO VG 22-32 Cery cold climate : ISO VG 15 Very warm climate: ISO VG 46
Front diff.	Universal axle transmission oil													ZF TE-ML 05F
Hydraulic tank	Hydraulic oil													Only mineral based oils Viscosity approx. 20 cSt at normal operating temp. Range: 10-250 cSt, max. 850 cSt at cold start. Hydraulic oil: HM or HV oils (ISO 6743/4, CETOP RP 91H) or H-LP oils (DIN 51524). • Contact oil supplier when operating in temperature below -25°C • Warm up in neutral after starting at temperature near lower limitation of the oil . • If using Biological oil contact your Hyundai Dealer before use. The oil must be approved by Doosan Infracore Norway AS.
Lubricator														Lithium saponified with EP-additive Consistency NLGI - 0/1/2.
Automatic Central lubr. system	Universal grease													NOTE: See specification on the next page, Grease should not contain graphite or PTFE. Consistency NLGI-2 or synthetic 2, NLGI 0/1 or Synthetic 0/1
Hydraulic pump, tiltable cab	Hydraulic oil													NOTE: If the cab should be tilted by use of the hydraulic pump at temperatures below -20°C, use oil fluid 4 Aero Shell or similar

Description	ASTM test Method	Min/Max	Specification	Remarks
NLGI Grade	D217	Std	2	-25 °C to +130 °C
Thickener type		Min	Lithium Complex	
Solid Additives, Moly		Max	5 %	No Graphite
Oxidation Stability	D942	Max	0,3 bar	@ 100 hrs
Water washout	D1264	Max	5 %	@ 79 °C
Dropping point	D1264	Min	140 °C	
Rust protection	D1743		Pass	
Copper corrosion	D4048	Max	1 B	
Base oil viscosity	D445	Min	600 cSt	@ 40 °C
Four ball (EP) weld point	D2596	Min	400 kg	
Four ball wear	D2266	Max	0,6 mm	1 hr @ 75 °C/1200 rpm/40 kg

The grease quality is important due to potential damage and wear in bearings, any failure in the tandem and articulation bearing will create a high repair cost.

Use of Grease with wrong specification will affect warranty claims.

Make sure that you meet the specifications, and have extra focus at:

1. Four ball (Extreme Pressure) weld point.
2. Four ball wear.

Filling capacities HA30/HA30A

All capacities are measured in litres (dm³), and are approximate values. To achieve correct level **ALWAYS**: check at dip stick, level eye, level plug etc.

(Refer to the Hyundai Operating & Maintenance Manual Chapter 7)

Description:

Specified capacity: Total tank/reservoir volume or total capacity from empty.

Component/Fluid	Specified capacity (litres/kilograms)
Engine oil	33,5
Engine coolant	45
Fuel Tank	363
Transmission oil*	67
Front differential	9,4
Tandem housing, Rear reduction gear, Rear differential***	128
Front reduction gear (each)	2 x 3
Brake cooling tank	15
Hydraulic tank	63
Windscreen washer tank	4,5
AdBlue® tank	70
AC system	2,0 kg **

* - Check level when engine runs at low idle.

Do **not** run engine **without** oil in the transmission.

** - 2,86 tonnes CO₂ equivalent each unit

*** - Several filling points

Filling capacities HA45/HA45A

All capacities are measured in liters (dm³), and are approximate values. To achieve correct level **ALWAYS**: check at dip stick, level eye, level plug etc.

(Refer to the Hyundai Operating & Maintenance Manual Chapter 7)

Description:

Specified capacity: Total tank/reservoir volume or total capacity from empty.

Component/Fluid	Specified capacity (litres/kilograms)
Engine oil	45
Engine coolant	50
Fuel Tank	490
Transmission oil*	68
Front differential	9,4
Tandem housing, Rear reduction gear, Rear differential ***	240
Front reduction gear (each)	2 x 4,8
Brake cooling tank	15
Hydraulic tank	63
Windscreen washer tank	4.5
AdBlue® tank	70
AC system	2,0 kg **

- * - Check level when engine runs at low idle.
Do **not** run engine **without** oil in the transmission.
- ** - 2,86 tonnes CO₂ equivalent each unit
- *** - Several filling points

Composition of the fuel

The composition of the fuel is extremely important for the operation and service life of the engine and injection system. The engine output and exhaust gases are also dependent on the fuel grade.

The fuel must conform to EU standard EN590. The tables below shows some of the key properties.

T2/T3 - PDE properties

Property (PDE)	Requirements
Viscosity at 40°C (104°F)	2.0-4.5 cSt
Density at 15°C (59°F)	0.82-0.86 cSt
Ignitability (CET rating)	minimum 49
Flashpoint	56°C (132°F)

The A sulphur content of 0-2,000 ppm in the fuel (0.2%) gives an oil change interval of up to 500 hours.

- With a sulphur content of 2,000-4,000 ppm in the fuel, the oil change interval is halved to max. 250 hours.
- Maximum permitted sulphur contents in the fuel is 4,000 ppm.

T4F /StageV XPI properties

Property (XPI)	Requirements
Viscosity at 40°C (104°F)	1.4-4.5 cSt
Density at 15°C (59°F)	0.77-0.87 kg/dm ³
Ignitability (CET rating)	minimum 49
Flashpoint	56°C (132°F)
Particulate contamination level	Classification 22/20/17 according to ISO 4406

It is important for sulphur-free or ultra-low sulphur diesel to be used on engines with SCR systems certified in accordance with Stage III B/ Tier 4i or later to ensure that the engine operates correctly. If diesel with an excessive sulphur content is used, it can cause damage to the engine and the SCR system.

From January 2011 legislation in the USA and Europe requires all diesel engines not used on the road to be run on sulphur-free or ultra-low sulphur diesel.

NOTE

In Europe, the fuel should be sulphur-free according to standard EN 590. This means that the sulphur content must not exceed 10 ppm.

In the USA the fuel must be an ultra-low sulphur fuel in accordance with standard ASTM D975. This means that the sulphur content may not exceed 15 ppm.

NOTE

European standard: EN 590. EN 590 contains maximum 7% Biodiesel EN 14214.

Transmission oil list

This list comes from the ZF website and is updated every 3 months. Please check the date of publication of the ZF transmission oil list, if necessary please go to the ZF website:

<https://aftermarket.zf.com/remotemedialol-lubricants/lol-en/lol-te-ml-03-en.pdf>

to download the latest version of the ZF transmission oil list.

For transmission - ERGOPOWER L2 (generation A)

Date of version 01.10.2020

Lubricant class 03H

Biodegradable lubricants

Environmental label RAL-UZ 79 (Blauer Engel), VAMIL-regeling

Viscosity grade: SAE 75W-80

Instructions on the use of biodegradable lubricants:

The oil manufacturer's change-over directives included in the product description are to be observed when change-over to biodegradable lubricants is effected.

Manufacturer

PANOLIN AG, MADETSWIL/CH

Trade name

PANOLIN BIOFLUID ZFH 10W/30

Lubricant class 03M

Automatic Transmission Fluids (ATF)

Manufacturer

BASF SE, LUDWIGSHAFEN/DE

CASTROL LTD, LONDON/GB

CASTROL LTD, LONDON/GB

EXXONMOBIL CORPORATION, HOUSTON, TX/US

JOHN DEERE, MOLINE, ILLINOIS/US

Trade name

EMGARD 2805

CASTROL TRANSYND

TES-295 SYN TRANSMISSION FLUID

MOBIL DELVAC 1 ATF

HD SYNTHETIC TRANSMISSION FLUID

Axles oil list

This list comes from the ZF website and is updated every 3 months. Please check the date of publication of the ZF transmission oil list, if necessary please go to the ZF website:

<https://aftermarket.zf.com/remotemedialol-lubricantslol-enlol-te-mi-05-en.pdf>

(05F)

to download the latest version of the ZF transmission oil list.

Date of version 01.10.2020

Lubricant class 05F

Universal axle and transmission oil

Manufacturer

ADDINOL LUBE OIL GMBH, LEUNA/DE
 ADDINOL LUBE OIL GMBH, LEUNA/DE
 ARAL AG, BOCHUM/DE
 ARGO TRACTORS S.P.A., FABBRICO RE/IT
 ARGO TRACTORS S.P.A., FABBRICO RE/IT
 ARGO TRACTORS S.P.A., FABBRICO RE/IT
 AVIA AG, MÜNCHEN/DE
 BAYWA AG MÜNCHEN, MÜNCHEN/DE
 BAYWA AG MÜNCHEN, MÜNCHEN/DE
 BLASER SWISSLUBE AG, HASLE-RÜEGSAU/CH
 BP PLC., LONDON/GB
 BP PLC., LONDON/GB
 BP PLC., LONDON/GB
 BUCHER AG LANGENTHAL, LANGENTHAL/CH
 BUCHER AG LANGENTHAL, LANGENTHAL/CH
 BUCHER AG LANGENTHAL, LANGENTHAL/CH
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CATERPILLAR, INC., MOSSVILLE/US
 CEPESA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CLASS KGAA MBH, HARSEWINKEL/DE
 DEUTSCHE ÖLWERKE LUBMIN, LUBMIN/DE
 EUROL B.V., NJIVERDAL/NL
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FINKE MINERALÖLWERK GMBH, 27374 VISSSELHÖVEDE/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GB LUBRICANTS, GATESHEAD/GB
 GS CALTEX CORPORATION, SEOUL/KR
 GULF OIL INTERNATIONAL, MUMBAI/IN
 GULF OIL INTERNATIONAL, MUMBAI/IN
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN
 HYUNDAI OILBANK CO., LTD., SEOUL/KR
 INA MAZIVA LTD., ZAGREB/HR
 INA MAZIVA LTD., ZAGREB/HR
 INA MAZIVA LTD., ZAGREB/HR
 JCB INDIA, BALLABGARH/IN
 JOHN DEERE, MOLINE, ILLINOIS/US
 JXTG NIPPON OIL & ENERGY CORPORATION, TOKYO/JP
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE
 LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE
 LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE

Trade name

ADDINOL UTTO SAE 10W-30
 ADDINOL UTTO EXTRA (SAE 20W-40)
 ARAL FLUID HGS
 VELA C+ LANDINI
 VELA C+ MCCORMICK
 VELA C+ AGROLUBE
 AVIA HYDROFLUID TD
 TECTROL UTTO-ZF
 TECTROL UTTO-HF
 EVOLCA UTTO 8068
 BP VANELLUS AGRI SUPER TRANSMISSION 80W
 BP TRACTRAN TF-10
 BP VANELLUS AGRI SUPER TRANSMISSION 80W
 FARMER POLY 304
 MOTOREX UTTO CF
 FARMER POLY 604
 CASTROL AGRI TRANS PLUS 80W
 CASTROL AGRI TRANS PLUS 10W-30
 CASTROL TRANSMAX AGRI TRANS PLUS 80W
 CASTROL AGRI TRANS PLUS 80W
 CASTROL TRANSMAX AGRI TRANS PLUS 80W
 CAT MULTIPURPOSE TRACTOR OIL
 CEPESA AURIGA TE 55 10W-30
 CHEVRON 1000 THF
 CLAAS AGRISHIFT GA 12
 AVENO UTTO
 EUROL HYKROL JD 68
 MOBILFLUID 424
 MOBILFLUID 426
 MOBIL HYDRAUL 56
 MOBILFLUID 424
 MOBILFLUID 426
 MOBILFLUID 428
 AVIATICON AGRA PREMIUM UTTO
 FUCHS TITAN UTTO ZF (SAE 20W-40)
 FUCHS TITAN AGRIFARM UTTO MP
 FUCHS TITAN AGRIFARM UTTO MP
 G-SPECIAL UTTO 10W-30
 G-SPECIAL UTTO 10W-30
 G-SPECIAL UTTO PREMIUM 10W-30
 GB UNITRANS(R) ZF
 DOOSAN AXLE OIL STANDARD
 GULF MPTF 10W-30
 GULF MPTF 10W-30
 HP SUPERTRAN FM
 XTEER THF 75W-80
 INA TRANSHIDROL JD 50
 INA TRANSHIDROL ZF 20W-40
 INA TRANSHIDROL JD 50
 JCB REAR AXLE OIL
 JOHN DEERE HY-GARD
 KUBOTA UDT-HD
 Q8 T 2000
 JCB HP GEAR OIL PLUS
 JCB HP GEAR OIL PLUS
 JCB HP GEAR OIL PLUS
 Q8 T 2200
 Q8 T 2200
 LIEBHERR GEAR MF 80W
 LIEBHERR GEAR MF 80W
 LIEBHERR GEAR PLUS 20W-40

LIQUI MOLY GMBH, ULM/DE	LIQUI MOLY SPECIAL UTTO
MEGUIN GMBH & CO. KG, SAARLOUIS/DE	MEGOL TRAKTORENOEL UTTO PREMIUM SAE 10W-30
OBNINSKORGSIINTEZ, OBNINSK/RU	RW DRIVE FORCE UTTO SAE 10W-30
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL VERSO PLUS
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL VERSO LVX
OPET FUCHS MADENI YAG. SAN. VE TIC. A.S., IZMIR/TR	OPET FULLGEAR FD 80W-140
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	UTTO FLUID 4 D SAE 10W-30
PANOLIN AG, MADET SWIL/CH	PANOLIN JD 303
PANOLIN AG, MADET SWIL/CH	PANOLIN CONSTAR UTTO 803
PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR	LUBRAX UNITRACTOR SAE 10W-30
PETROGAL S.A., LISBOA/PT	GALP TRALUB 807 S
PETROL OFISI A.S., ISTANBUL/TR	MAXITRAK TMS OIL 500
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA TRX 20W-40 (SAE 20W-40)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA TRX 80W-140 (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	ARBOR TRW 140 SPECIAL (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 20W-40 (SAE 20W-40)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 80W-140 (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 80W-140 (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 20W-40
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	ARBOR MTF (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA NEXPLORE (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA NEXPLORE (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA NEXPLORE (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	ARBOR MTF (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA TRX 80W-140 (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 80W-140 (SAE 80W-140)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA TRX 20W-40 (SAE 20W-40)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKCELA TRANSAXLE FLUID 20W-40 (SAE 20W-40)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AMBRA MULTI G (SAE 10W-30)
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	PETRONAS AKCELA NEXPLORE (SAE 10W-30)
PHI OIL GMBH, ST. GEORGEN/AT	GEAR OIL UTTO SILVER 10W-30
RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE	RAVENOL GETRIEBEOEL UTTO
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES	REPSOL ORION UTTO
ROLF LUBRICANTS GMBH, LEVERKUSEN/DE	ROLF UTTO SAE 10W-30
SAME DEUTZ FAHR, TREVIGLIO/IT	SDF UTTO
SAME DEUTZ FAHR, TREVIGLIO/IT	DF UTTO
SASOL ENERGY, JOHANNESBURG/ZA	UNIVERSAL TRANSMISSION OIL 68
SASOL ENERGY, JOHANNESBURG/ZA	SASOL UNIVERSAL TRANSMISSION OIL RS 68
SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN	SAVSOL 315 HAT
SEANON PETROCHEMICAL CO.,LTD., LIUZHOU, GUANGXI/CN	SEANON DEDICATED TRANSMISSION OIL 10W-30
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S6 TXME
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S4 TXM
SINOPEC LUBRICANT CO., LTD., BEIJING/CN	SINOPEC GREATWALL UTTO
SINOPEC LUBRICANT CO., LTD., BEIJING/CN	SINOPEC UTTO
SK LUBRICANTS, SEOUL/KR	SK ZIC GL-4 ZF 80W
SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE	SRS HYDROFLUID N
SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE	SRS HYDROFLUID A
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	TOTAL DYNATRANS MPV
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	ELF TRACTELF BF 16
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	TOTAL DYNATRANS LS 20W-40
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	TOTAL DYNATRANS MPWB
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	TOTAL DYNATRANS MPV
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	ELF TRACTELF BF 16
TOTAL LUBRIFIANTS S.A., NANTERRE/FR	TOTAL DYNATRANS MPX
UNIL OPAL, SAUMUR/FR	UNIL OPAL FLUID G2 VARIO
UNIL OPAL, SAUMUR/FR	UNIL OPAL FLUID MVZ
VALVOLINE CUMMINS PVT LIMITED, GURGAON/IN	VALVOLINE UTF PREMIUM
VALVOLINE EUROPE, DORDRECHT/NL	UNITRAC 80W
VALVOLINE EUROPE, DORDRECHT/NL	NESTE GEAR UTTO

