PT FEOTECH ENERGY NUSANTARA

OFFICIAL IMPORTER AND DISTRIBUTOR OF GAZPROMNEFT LUBRICANTS IN INDONESIA

GAZPROMNEFT HYDRAULIC

HLP 32 · 46 · 68 · 100

Industrial standard for stationary hydraulics — with documents for every batch and stock in Jakarta

OEM-approved anti-wear hydraulic oil for presses, injection moulding and power units — registered in Indonesia, stocked locally

VERIFIED, NOT JUST CLAIMED



DIN 51524-2
ISO 11158 HM

OEM APPROVED
Eaton · Rexroth · Denison

NPT · INDONESIA
registered · in stock

Customer version · English

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VERIFIED, NOT JUST CLAIMED

Gazpromneft Lubricants — industrial scale

Gazprom Neft Group — one of Russia's largest oil companies

70+ years of lubricant production in Omsk

oil refining in Omsk since 1955 · Gazpromneft Lubricants since 2007 · OZSM full-cycle complex (2009)

590,000 t/yr

oils, greases, technical fluids · plus 220,000 t/yr base oils (hydro-isodewaxing)

400+ OEM approvals

including Bosch Rexroth · 700 products · 2,800 SKUs

70+ countries

supply geography, including South-East Asia

4 plants in Russia · OZSM · YaNOS · MZSM · Rospolikhim

Omsk (OZSM), Yaroslavl (YaNOS), Fryazino (MZSM) and Rospolikhim; every third can of motor oil in Russia is made by Gazpromneft Lubricants.

Full production cycle

Full cycle: from base oils to packaging · exports to 70+ countries



ISO 9001 · 14001 · 45001 management systems · Source: Gazpromneft Lubricants catalogue "Solutions for Your Business" 2025 · gazpromneft-sm.ru · gazprom-neft.ru





Omsk Lubricants Plant (OZSM) — the flagship full-cycle complex of Gazpromneft Lubricants

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FEOTECH ENERGY NUSANTARA

POWERED BY EXPERIENCE. DRIVEN BY PEOPLE

AUTHORIZED IMPORTER & DISTRIBUTOR

GAZPROMNEFT

FULL-CYCLE INDUSTRIAL PLATFORM IN INDONESIA

Official importer and distributor of Gazpromneft Lubricants

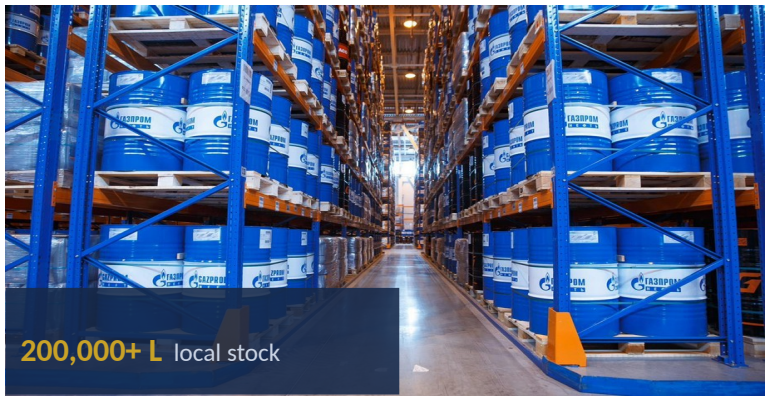
USD 350M

GROUP ANNUAL TURNOVER · FEO GROUP

20+ YEARS

TEAM EXPERTISE







JAKARTA HQ

Office 88@Kasablanka · PT PMA

Local commercial & technical team · 33rd Floor · Jakarta

LOCAL STOCK & LOGISTICS

Local stock · Greater Jakarta

Direct imports · Drums · IBC · FCL/LCL

ENGINEERING SUPPORT

Oil analysis · Field engineering · OEM selection

Condition monitoring · On-site technical support

01 · DIRECT SUPPLY

Direct supply from plant in Russia

COA · MSDS · batch traceability

02 · COMMERCIAL INFRASTRUCTURE

International contracts and trading operations

Contracting · Documentation · Settlements · Supply coordination

03 · REGULATORY COMPLIANCE

SNI · NPB · OSS RBA · API-U · ISO

NPT · NPB · SNI · OSS RBA · API-U — import and distribution

04 · END-TO-END SUPPLY CHAIN

Factory → Import → Local stock → Customer

Factory release · Warehousing · Local delivery

COA · MSDS · import documentation

ONE PLATFORM. FULL RESPONSIBILITY. FROM MANUFACTURER TO CUSTOMER EQUIPMENT.

Single platform of accountability — from producer to customer equipment

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MANUFACTURER

Hydraulic oils — a core engineering competence of Gazpromneft Lubricants

Full development cycle. Industrial scale. Confirmed by leading hydraulics and equipment OEMs.

01 · ENGINEER	→	02 · TEST	→	03 · VALIDATE	→	04 · PRODUCE
R&D		**Testing**		**OEM validation**		**Series production**
Own base oils and HLP / HVLP formulations		Laboratory, rig and pump tests		Testing to hydraulics OEM requirements		Industrial production and quality control

ENGINEERING AT SCALE

15+ YEARS
HYDRAULIC OIL ENGINEERING & PRODUCTION

≈1 BILLION LITRES
OF HYDRAULIC OILS PRODUCED

3 OEM PUMP TESTS
BOSCH · EATON · DENISON
Viscosity · Wear · Oxidation · Filtration · Air · Water · Seals

HYDRAULIC TECHNOLOGY VALIDATION (OEM Approvals)

Rexroth Bosch Group	Parker DENISON Hydraulics	EATON VICKERS	fives	MAG	PSM HYDRAULICS
fluid rating · validation	HF qualification	approval · 35VQ25	approval	approval	recommended fluids

EQUIPMENT MANUFACTURER RECOGNITION

KOMATSU	HITACHI Reliable Solutions	BELAZ	metso	SIERRA INTERNATIONAL MACHINERY	BELTRAMELLI S.p.A. COSTRUZIONE E LAVORAZIONE DI GRANDI IMPIANTI
OEM manual	ZX manuals	OEM manual	Lindemann · use permission	use permission	recognition

Application in accordance with OEM requirements

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Indonesia — an economy with growing demand for industrial hydraulics

ANNUAL CONSUMPTION · ACTUAL 2024

90 MILLION L

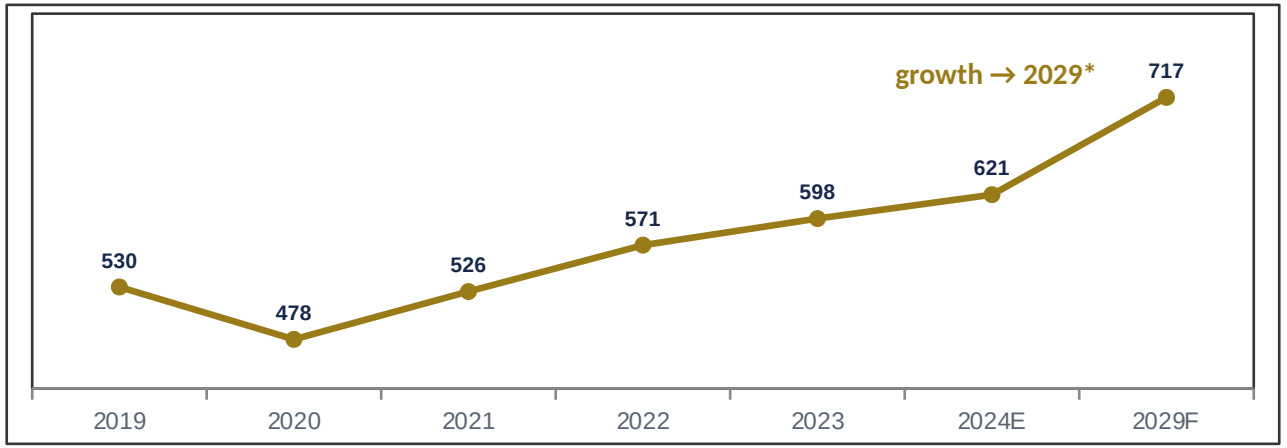
of hydraulic oils in Indonesia

101.7 MILLION L forecast 2029

+13% growth · 2024→2029*

CAGR ≈2.5%

INDUSTRIAL LUBRICANTS DEMAND · INDONESIA · MILLION L



2020 — COVID dip · recovery → structural growth · E — estimate, F — forecast

55% of Indonesia's total lubricants market — INDUSTRIAL LUBRICANTS segment*

Hydraulic oils — one of the key products of Indonesia's industrial segment



Demand for hydraulic oils is driven by the industrial equipment fleet and how intensively it is operated

*Source: Mordor Intelligence (2019–2029); * calculated from source data; smelters — ESDM, published 08.12.2025*

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DRIVERS

Modern hydraulics raise the demands on oil

Performance · efficiency · reliability · TCO — demands now apply not only to the machine but also to its hydraulic oil

WHAT OPERATORS NEED

PRODUCTIVITY
Productivity · cycle performance

EFFICIENCY
Efficiency · power losses

RELIABILITY
Reliability · component protection

TCO
Cost of ownership · energy · maintenance · downtime

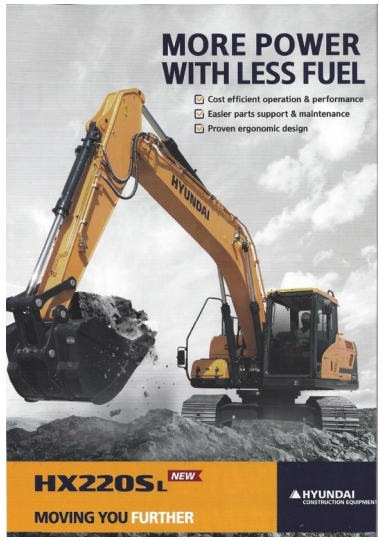


Hydraulic oil sampling on site

WHAT OEMs PROMISE







OEMs define machine value through performance and efficiency

WHAT HAS CHANGED IN HYDRAULICS

HIGHER PRESSURE

SMALLER COMPONENTS

HIGHER POWER DENSITY

AUTOMATION & CONTROL



HIGHER DEMANDS ON HYDRAULIC OIL
Higher demands on hydraulic oil

THE ENGINEERING CONSEQUENCE

If hydraulics have changed, the approach to oil selection must change too.

Including equipment in a hot climate all year round

Concept: technical presentation by an additive technology partner at the Gazpromneft Lubricants conference, 2019 · OEM advertising excerpts illustrate the system of industry requirements; they are not an OEM recommendation for Gazpromneft Hydraulic HLP

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Life and power grow.
Clearances and volumes shrink

Modern hydraulic systems require a smaller oil volume to work longer, hotter and under higher load.

RISE

SERVICE INTERVAL ↑
Oil life is increasing

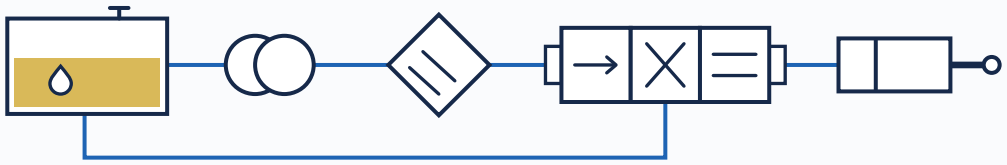
POWER AND RESPONSE ↑
Power density and productivity are rising

WORKING TEMPERATURE ↑
To 80–90 °C*

WORKING PRESSURE ↑
Tens to hundreds of bar

TYPICAL HYDRAULICS

TEMPERATURE ↓ PRESSURE ↓ CLEARANCES ↓



RESERVOIR — PUMP — FILTER — VALVE BLOCK — ACTUATOR

LESS OIL — MORE LOAD

DECREASE

FILTRATION RATING ↓
≈ 25 → 5 µm

WORKING CLEARANCES ↓
≈ 3–5 µm

TANK SIZE ↓
Mobile equipment: from hundreds to tens of litres
less oil per unit of power

RISING DEMANDS ON HYDRAULIC OIL

OIL HYDR.

VISCOSITY CONTROL
Stable viscosity as temperature changes

THERMO-OXIDATIVE STABILITY
Protection at high temperatures

ANTI-WEAR PERFORMANCE
Protection of parts under high loads

FILTERABILITY
Keeps its properties under fine filtration

AIR AND WATER CONTROL
Fast air and water separation

ANTI-CORROSION
Antioxidant and hydrolytic stability

Modern hydraulic systems demand more from the oil.
Oil choice determines equipment reliability, efficiency and cost of ownership.

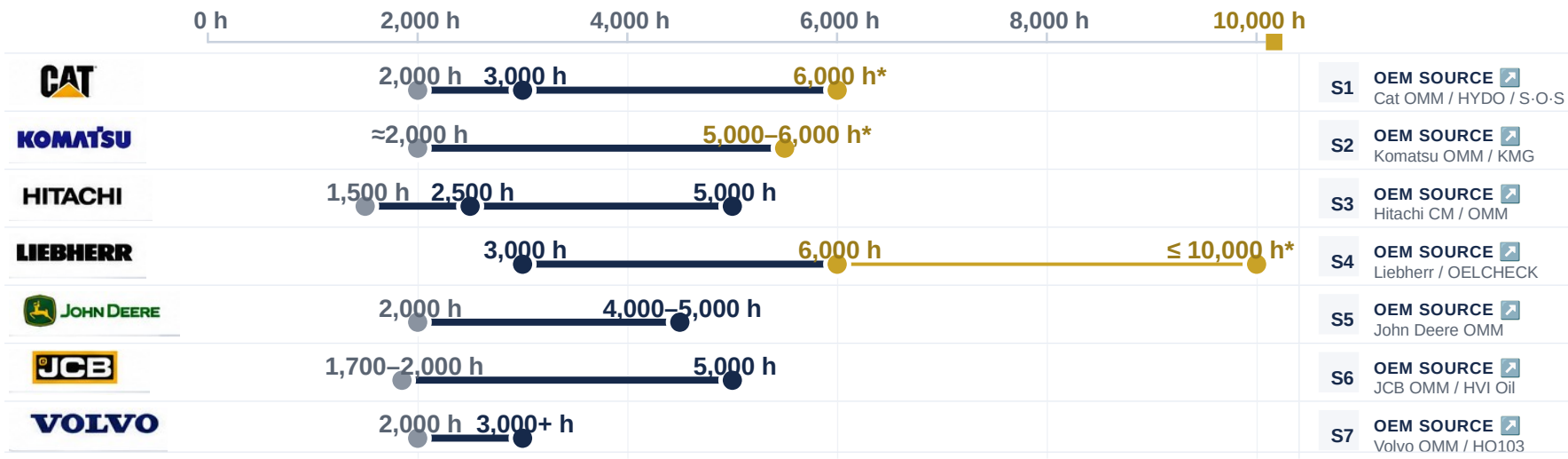
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* Depends on the application

2,000 HOURS — STILL YOUR STANDARD?

Leading OEMs build hydraulic system operation around extended oil life and monitoring of its actual condition.

EVOLUTION OF HYDRAULIC OIL LIFE



* Documented by Liebherr/OELCHECK as field practice with oil analysis; not a universal OEM-prescribed interval.

WHAT MAKES LONGER OIL LIFE POSSIBLE?

HIGH VI
Stable viscosity as temperature changes

OXIDATION STABILITY
Resistance to oxidation and deposit formation

CLEANLINESS & FILTRATION
Oil cleanliness, precision-pair protection

OIL ANALYSIS
Oil condition monitoring and life forecasting

LONGER INTERVAL = HIGHER DEMANDS ON OIL

INDUSTRIAL STATIONARY HYDRAULICS ARE MOVING BEYOND FIXED INTERVALS

The interval is increasingly set by actual oil condition, not just by calendar or operating hours

FIXED INTERVAL schedule → **OIL ANALYSIS** oil analysis → **CONDITION MONITORING** condition monitoring → **MANAGED OIL LIFE** life management

STATIONARY OEMs ARE THERE

rexroth A Bosch Company · ARBURG · ENGEL be the first

IS YOUR INTERVAL SET BY OIL CONDITION — OR JUST BY A FAMILIAR SCHEDULE?

Global OEMs have moved to oil life management. Have you?

Intervals per OEM operating manuals and official materials. The specific interval depends on machine model, fluid type, duty, filtration and the oil analysis programme.
OEM data is not a statement of Gazpromneft Hydraulic HLP oil life. OEM technologies and fluid requirements differ. Always follow the current OEM specification and maintenance programme.

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OEM ENGINEERING PERSPECTIVE

FIVE CONTROL LOOPS FOR HYDRAULIC OIL IN OEM TECHNICAL REQUIREMENTS

Equipment makers turn temperature, particles, water, air and oil ageing into measurable requirements for the working oil.

DIFFERENT EQUIPMENT · SIMILAR FLUID-CONTROL PRIORITIES

Rexroth Bosch Group · Parker Denison Hydraulics · Eaton Vickers · Hitachi · Komatsu · Liebherr

CONTAMINANT CONTROL

Solid particle control

IN PRACTICE · dust and open containers → scoring on pump precision pairs

3–5 µm precision clearance **vs ≥6 / ≥14 µm(c)**

20/18/15 → 16/14/11 typical OEM targets **ISO 4406**

−1 code ≈ 2× fewer particles per code step

AIR MANAGEMENT

Air release and foam control

IN PRACTICE · foam in tank → jerky drive, slow response

≤ 10 min air release @ 50 °C · ISO VG 46 **DIN ISO 9120**

≤ 150 / 0 ml foam Seq. I — tendency / stability **ASTM D892**

ENTRAINED AIR → compressibility · response loss · heat · cavitation risk

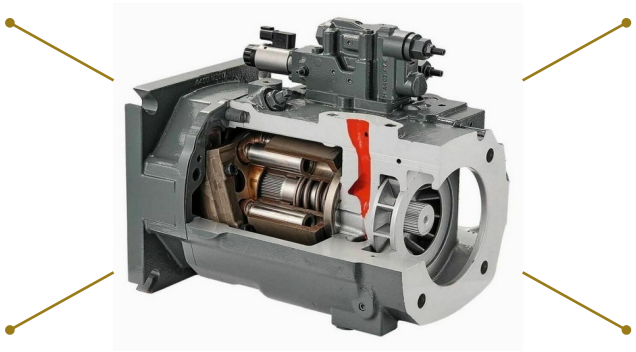
VISCOSITY CONTROL Operating viscosity control

IN PRACTICE · heat and long shifts → "sluggish" hydraulics, rising leaks

41.4–50.6 mm²/s @ 40 °C · ISO VG 46 tolerance **ASTM D445**

VI — per HLP-class TDS and OEM requirement · DIN 51524-2 · ASTM D2270

16–36 cSt · OEM working window — example: Liebherr



POWER TRANSMISSION · LUBRICATION · HEAT REMOVAL · COMPONENT PROTECTION

WATER MANAGEMENT

Water separation & control

IN PRACTICE · rain and condensate → cloudy oil, corrosion

≤ 30 min demulsibility @ 54 °C **ASTM D1401**

40 / 40 / 0 ml target oil / water / emulsion **ISO 6614**

WATER → corrosion · film disruption · oxidation · filterability

FLUID DURABILITY

Stability of properties in service

IN PRACTICE · premature ageing → varnish on valves

FZG ≥ 10 load stage · scuffing **DIN ISO 14635-1**

Δ acidity ≤ 2.0 mg KOH/g / 1000 h **DIN 51587**

NBR / FKM seal compatibility DIN 51524-2

OIL PARAMETER DEVIATION ↓ EFFICIENCY LOSS · WEAR · HEATING · POORER RESPONSE ↓ COMPONENT LIFE · SYSTEM RELIABILITY

DO YOU KNOW THE RANGE YOUR OIL ACTUALLY OPERATES IN?

Viscosity · ISO 4406 · Water · Air · Oxidation

ENGINEERING VIEW

HYDRAULIC OIL IS NOT JUST A CONSUMABLE

Viscosity, cleanliness, water and air content and oil stability directly affect the efficiency, wear and life of the hydraulic system.

NEXT → HOW HLP MEETS THESE DEMANDS

Limits shown are the DIN 51524-2 / ISO frame and typical OEM targets · OEM requirements depend on component and application · Always follow the current OEM specification

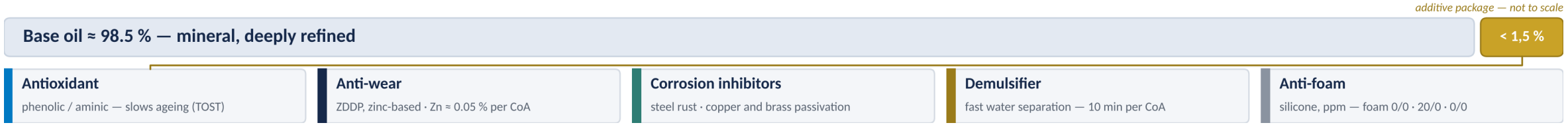
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Global classification: letters decoded, what's inside

ISO 6743-4 and DIN 51524 describe the fluid performance level; it is set by the base oil and additive package. HLP / HM is the most common class in industrial hydraulics.

Class · ISO 6743-4 / DIN 51524	What it gives	Additives inside	Where used	Gazpromneft
HL · DIN 51524-1	oxidation and rust protection	antioxidant · rust inhibitors · anti-foam	low-load and circulating systems	Industrial 20 · 30 · 40
HM · DIN 51524-2 · HLP	**+ anti-wear pump protection**	**+ ZDDP (zinc AW) · demulsifier · copper passivator**	**presses, IMMs, machine tools, HPUs — most industrial systems**	**Hydraulic HLP 32 · 46 · 68 · 100**
HV · DIN 51524-3 · HVLP	+ stable viscosity across temperature swings	+ polymer thickener (VI improver)	mobile equipment, outdoor sites	Hydraulic HVLP 10–68
HM zinc-free · HLP ashless	zinc-free anti-wear protection	ashless AW additives instead of ZDDP	silver-bearing parts, servo valves, OEM requirement	Hydraulic HZF 32 · 46 · 68 · 100
HLPD / HVLPD	+ keeps water and dirt in suspension	+ detergent · dispersant	systems with unavoidable water and dirt	Hydraulic HLPD / HVLPD
HFC · HFDU · ISO 12922	fire-resistant	water-glycol/esters — other chemistry	casting, furnace, hot presses	to OEM specification

HLP PACKAGE ANATOMY — UNDER 1.5 % OF VOLUME THAT DEFINES LIFE



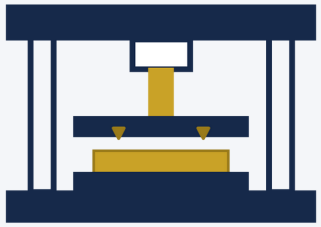
Manual says "HM" or "HLP to DIN 51524-2"? That is Gazpromneft Hydraulic HLP — no re-approval with the OEM and no premium for properties your system does not need

Sources: ISO 6743-4:2015 (L-H classification), ISO 11158, DIN 51524-1/-2/-3, ISO 12922 (fire-resistant), ISO 15380 (biodegradable); package composition is typical class chemistry, not the Gazpromneft formulation. Zinc 0.05 % — CoA No. 7272. Gazpromneft products per manufacturer's catalogue; suitability for a specific machine per its manual.

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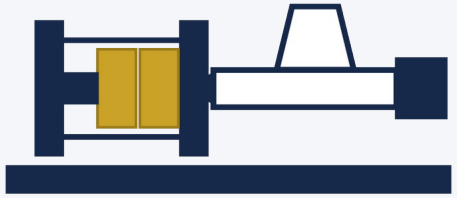
Where HLP works: presses, moulding, HPUs

Gazpromneft Hydraulic HLP is the working fluid for hydraulic drives of stationary equipment that need anti-wear performance, corrosion protection and filterability.



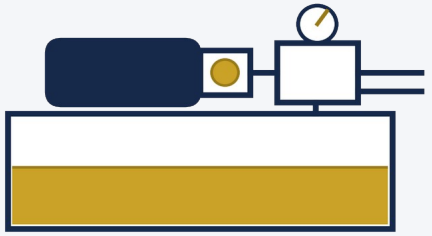
Presses and metalworking

hydraulic presses · bending and forming presses · shears · CNC machine tools



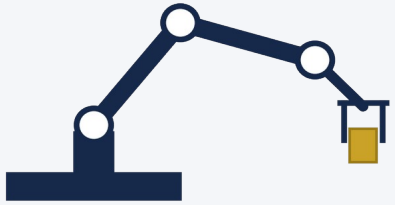
Moulding and forming machines

injection moulding machines · blow moulders · vulcanising presses



Production-line hydraulic power units

central HPUs · panel and paper lines · accumulator stations



Manipulators and auxiliary hydraulics

robots and manipulators · lifting tables · clamping and feed mechanisms

INDONESIAN INDUSTRIES WHERE THIS EQUIPMENT RUNS EVERY DAY

Plastics and packaging

IMMs, blow moulders

Metalworking

presses, shears, machines

Panels, furniture, paper

line presses, HPUs

Palm oil

presses, sterilisers

Ports & storage

lifting hydraulics

Processing and smelters

auxiliary-line HPUs

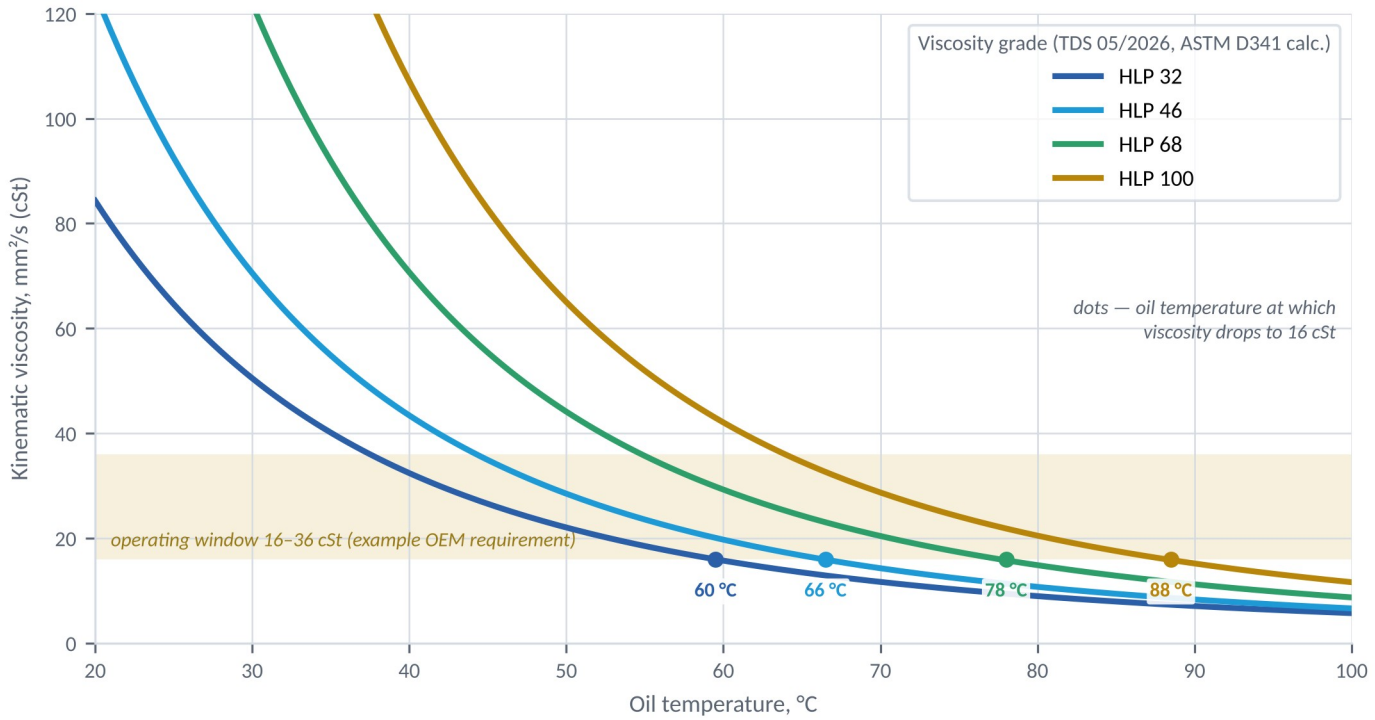
If your plant has presses, IMMs or a hydraulic power unit, you have the equipment Gazpromneft HLP was made for

Application scope per TDS Gazpromneft Hydraulic HLP 05/2026 (machine-tool hydraulics: moulding machines, presses, manipulators, machine tools, robots, forming machines). Industry split is editorial, not market statistics. Fire-hazard areas (metal casting, furnaces) need a fire-resistant fluid to OEM spec.

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Choose viscosity at operating oil temperature

Too low viscosity → more internal leakage. Too high → more flow resistance. The ISO VG grade is selected by oil temperature in the tank and the OEM requirement.



Curves: ASTM D341 calc. from typical KV40/KV100, TDS 05/2026 (not measured, no guarantee); 16–36 cSt window — example OEM requirement (Liebherr), not universal

OEM TABLE: HLP GRADE BY AMBIENT TEMPERATURE

Grade	Ambient temperature	Indonesia
HLP 32	−14 … +21 °C	—
HLP 46	−6 … +31 °C	air-conditioned shops
HLP 68	**0 … +40 °C**	**typical tropical shop**
HLP 100	**+5 … +48 °C**	**hot areas**

Komatsu Mining Germany, Parts & Service News AH12518a (2013): table for mineral HLP/HLPD to DIN 51524-2; "HVLP — only if the temperature range requires it"

NEEDED FOR SELECTION

- pump model and required viscosity window
- oil temperature in the tank (not air!) — start-up and steady state
- cleanliness to ISO 4406
- current oil and system volume

The right viscosity grade = less leakage and pump heating: FEOTECH selects HLP 46 / 68 / 100 by the measured oil temperature in your tank

Calculated guide values: HLP 46 ≈ 19.7 cSt at 60 °C and ≈ 10.7 cSt at 80 °C; exit from the 16 cSt window — HLP 32 ≈ 60 °C, HLP 46 ≈ 66 °C, HLP 68 ≈ 78 °C, HLP 100 ≈ 88 °C. Air temperature / oil temperature. ISO 3448: VG 32 — 28.8–35.2; VG 46 — 41.4–50.6; VG 68 — 61.2–74.8; VG 100 — 90–110 mm²/s at 40 °C.

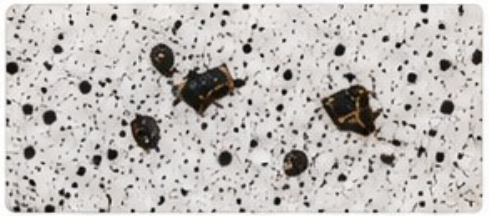
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OIL CLEANLINESS — A CONTROLLABLE FACTOR IN PUMP LIFE AND HYDRAULIC SYSTEM LIFE

Micron-sized particles put an abrasive load on precision hydraulic parts — pump life depends on the oil cleanliness class.

01 · "CONTAMINATION – LIFE" MODEL PALL / BHRA*

ISO 20/18/15
MORE CONTAMINATION



≈ 800 kg/yr
TOTAL PARTICLE MASS*

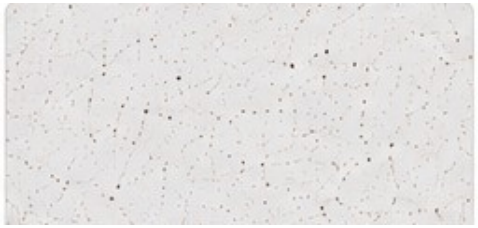
≈ 2 yrs
ILLUSTRATIVE PUMP LIFE

ISO 20/18/15 → 16/14/11

7×

LONGER PUMP LIFE
≈ 2 → 14 yrs · Pall / BHRA · illustrative*

ISO 16/14/11
LESS CONTAMINATION



≈ 23 kg/yr
TOTAL PARTICLE MASS*

≈ 14 yrs
ILLUSTRATIVE PUMP LIFE

DO YOU KNOW YOUR OIL'S ISO 4406 CLEANLINESS CODE?

01 From drum?

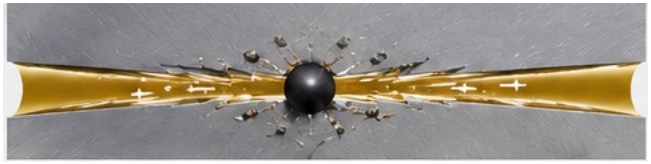
02 After transfer / in tank?

03 Class required by OEM?

NEW ≠ CLEAN

Actual ISO 4406 is determined by measurement.

02 · CONTAMINATION DAMAGE MECHANISM



PARTICLE → FILM RUPTURE → ABRASIVE WEAR → SECONDARY PARTICLES ↻ RECIRCULATION

03 · HOW TO READ ISO 4406

20 / **18** / **15**
≥4 µm(c) ≥6 µm(c) ≥14 µm(c)

−1 CODE ≈ HALF THE PARTICLES

04 · ENGINEERING BASIS · OEM & INDUSTRY REFERENCES

PALL Pall Corporation	Parker DENISON Hydraulics	Rexroth Bosch Group	EATON VICKERS
CONTAMINATION → COMPONENT LIFE	ISO 4406 CONTAMINANT CONTROL	COMPONENT CLEANLINESS REQUIREMENTS	CONFIRMATION OF PUMP LIFE

ENGINEERING VIEW

CLEANLINESS CAN'T BE EYEBALLED — IT MUST BE MEASURED.
Monitor ISO 4406 and compare with the OEM requirement. A real HLP 68 batch CoA: class 6 per GOST 17216 • ISO 13/10/7 (CoA 7338, batch 2415161701) — cleanliness you can order and verify by document.

Model: Pall Corporation / BHRA, Q ≈ 190 L/min · compares oil cleanliness levels, not brands · life values are illustrative · batch cleanliness class — per CoA

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VERIFIED, NOT JUST CLAIMED

Four grades per TDS — and a CoA for every batch

Typical range properties (TDS 05/2026) and measured values of the actual batch (CoA): the customer checks spec vs actual, not the catalogue.

BATCH CoA No. 7272 · Gazpromneft Hydraulic HLP-46

batch 2415160801 · 80 drums × 205 L · made 17.09.2024 · issued 19.09.2024

Property	STO limit	Batch actual
Viscosity at 40 °C, mm²/s	41.40 – 50.60	**46.85**
Viscosity index	≥ 95	**105**
Flash point, °C	≥ 210	**241**
Pour point, °C	≤ −27	**−34**
Acid number, mg KOH/g	≤ 1.0	**0.7**
Demulsibility at 54 °C, min	≤ 30	**10**
Foam, mL: seq. I · II · III	≤ 50/0	**0/0 · 20/0 · 0/0**
Copper corrosion, 3 h at 100 °C	≤ 1b	**1b**
Cleanliness · ISO 4406 code	≤ 10 · ≤ 19/15/13	**10 · 19/15/13**
Zinc mass fraction, %	≥ 0.04	**0.05**

GOST / ISO methods per CoA · complies with TR CU 030/2012 and STO 84035624-002-2014 · signed and stamped by Gazpromneft-Lubricants Ltd.

RANGE — TYPICAL VALUES, TDS 05/2026

	32	46	68	100
KV 40 °C, cSt	**32.4**	**43.4**	**70.7**	**107.1**
KV 100 °C, cSt	5.7	6.6	8.7	11.6
Viscosity index	107	99	96	94
Flash, °C	220	226	231	243
Pour point, °C	−45	−41	−35	−32

Specifications per TDS: DIN 51524-2 · ISO 11158 HM · ASTM D6158 HM · Denison HF-0/1/2 · Eaton E-FDGN-TB002-E · Bosch Rexroth RDE 90235 · Fives Cincinnati P-68/70/69

Cleanliness you can order

CoA of a real HLP 68 batch: class 6 to GOST 17216 • ISO 13/10/7 (CoA 7338, batch 2415161701). TDS standard — class 12; class 10 on request. The actual class of a batch is in its CoA.

You receive a batch with measured values, not catalogue ones: the CoA with every delivery is your incoming inspection without a lab

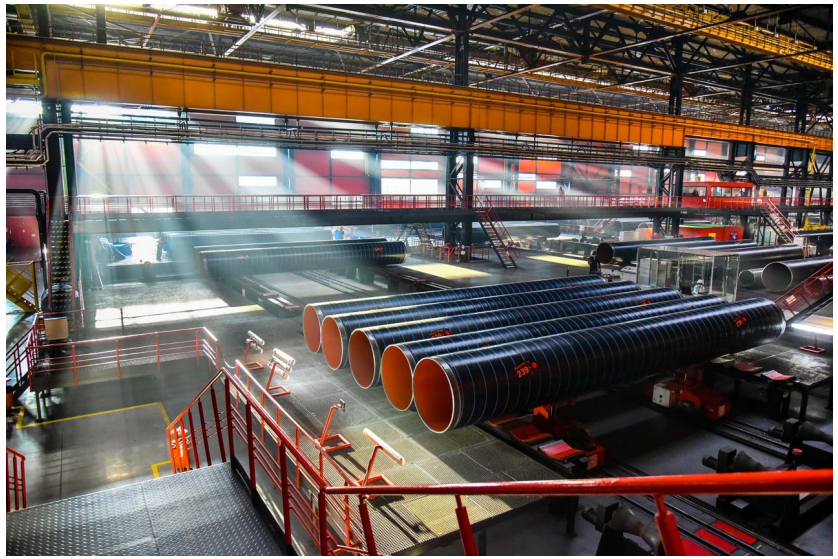
Sources: TDS Gazpromneft Hydraulic HLP 32/46/68/100, rev. 05/2026 (typical values — not guarantees; limits — STO 84035624-002-2014) · CoA No. 7272 of 19.09.2024, batch 2415160801 · CoA No. 7338 of 21.09.2024, batch 2415161701 (HLP 68). CoA vs TDS difference (46.85 vs typical 43.4) is within the STO limit 41.4–50.6.

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ChTPZ · SMS Meer: 40 t of HLP 46 in two new presses

VERIFIED, NOT JUST CLAIMED

Commissioning of the hydraulics of an SMS Meer GmbH edge-bending press and step-forming press at Chelyabinsk Pipe-Rolling Plant, July 2010 — reference letter in Russian and German signed by both parties.



ChTPZ, "Vysota 239" shop — large-diameter pipe production · photo: chtpz.tmk-group.ru

40 t

HLP 46 in two new presses

SMS Meer presses No. 5014038-08.000 & No. 5002021-08.000, July 2010

5 mo.

on warranty presses

no complaints · visual monitoring · plant and independent labs

18/15/12

ISO 4406 in a running press

class 9 to GOST 17216 — cleanliness kept in service

WHAT THE LETTER RECORDS

- incoming cleanliness-class inspection passed
- performance properties, incl. demulsibility and anti-foam, satisfactory; parameters stable
- no complaints about oil quality arose



Подписи: Unterschriften:

От ОАО «ЧТПЗ» / Von ChTPZ
Главный механик ОАО «ЧТПЗ»
Hauptmechaniker OAO ChTPZ
П.Б. Соколинский
Herr Sokolinski P.B.

От ф. "СМС Меер ГмбХ" / Von SMS Meer
Главный руководитель проекта на стройплощадке
Oberbaustellenleiter
Herr Jung R.M.

ChTPZ / SMS Meer GmbH reference letter, 2 pp. RU/DE: signed by ChTPZ chief mechanic and SMS Meer Oberbaustellenleiter. Original in FEOTECH archive

COMPANIES

ChTPZ — Chelyabinsk Pipe-Rolling Plant (since 1942), one of Russia's largest pipe producers, part of TMK since 2021 — the country's largest pipe holding; the presses are on the "Vysota 239" large-diameter pipe line (started 2010). **SMS Meer GmbH —** tube and forging-press division of SMS group (Germany): ≈ 14,000 employees, new orders €3.6 bn in 2024.

Your benefit: HLP 46 has already been commissioned on new SMS Meer presses — your press will not be the first experiment

Source: reference letter from OAO ChTPZ / SMS Meer GmbH to the General Director of Gazpromneft Lubricants (date in header not filled; fill — July 2010), 2 pp. RU/DE, original in FEOTECH archive; the additive package supplier's name is masked on the scan. Historical reference: the letter gives no final running hours — we do not speculate. Company profiles — public sources (10.2026). Shop photo — official ChTPZ website ("Tour" section).

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VSMPO-AVISMA: commission recommends HLP after 7 months

VERIFIED, NOT JUST CLAIMED

Pilot-scale trial of Gazpromneft Hydraulic HLP-32 in the hydraulic system of a Hasenclever HSPRZ-750 screw press (GVP-2), forging shop 22, 15.03–01.10.2010; commission report approved 21.12.2010.



VSMPO-AVISMA — forging a titanium billet on the press · photo: vsmpo.ru, media centre



СОГЛАСОВАНО
Директор по снабжению
Р.Р.Гайнутдинов-Дробышев
«21» 12 2010 г.

УТВЕРЖДАЮ
Главный механик ВСМПО
Ю.С. Семичев
«21» 12 2010 г.

ЗАКЛЮЧЕНИЕ
о проведении опытно-промышленных испытаний
гидравлического масла производства «ООО Газпромнефть-смазочные материалы»
Gazpromneft Hydraulic HLP-32 в гидравлической системе гидровинтового пресса
Hasenclever HSPRZ-750 ГВП-2 кузнечного комплекса - кузнечного цеха 22

Commission report: approved by VSMPO chief mechanic · agreed by procurement director · 21.12.2010

7 mo.

press running on HLP-32

15.03–01.10.2010 · changeover without flushing

17 → 13

cleanliness in service

GOST 17216: the oil carried old contaminants to the filters

No remarks

on the oil, full period

wear-metal content decreased; continued use recommended

FIVE CONFIRMED PROPERTIES — FROM THE REPORT TEXT

- **Detergency —** deposits cleaned out in the first 100 h
- **Stability —** viscosity and TAN in spec; flash 210 → 217 °C
- **Filterability —** cleanliness class 17 → 13
- **Anti-wear —** wear-metal content decreased
- **Demulsibility —** accidental water up to 4.5 % quickly separated

COMPANIES

VSMPO-AVISMA (Verkhnyaya Salda) — one of the world's largest full-cycle titanium producers: ≈ 90 % of Russia's titanium, ≈ 19,000 employees, exports to 50 countries, historic supplier to Boeing, Airbus, Rolls-Royce. **Hasenclever HSPRZ-750 —** hydraulic screw forging press by Germany's Hasenclever (now SMS group).

Your benefit: HLP changeover without flushing, cleaner oil in service, no remarks for seven months — signed by the titanium giant's commission

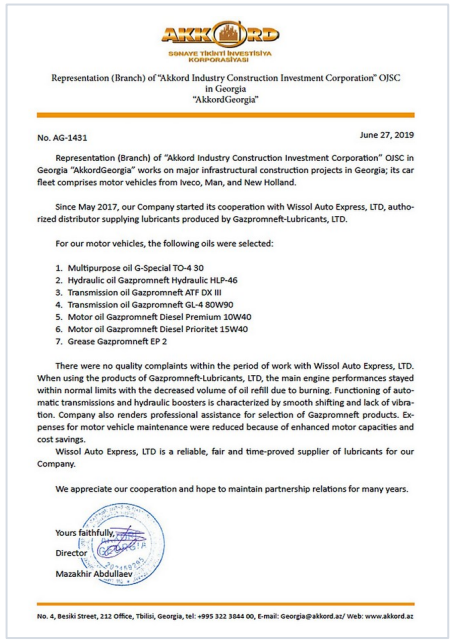
Source: report on pilot-scale trials, commission of OAO VSMPO-AVISMA Corporation × ZAO Ural-neft-service, approved 21.12.2010 (scan, 2 pp., original in archive). The water episode up to 4.5 % was an emergency, not a permissible limit. Changeover without flushing — experience of one specific system. Historical reference. Photo — VSMPO-AVISMA media centre (vsmpo.ru), forging-shop illustration.

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VERIFIED, NOT JUST CLAIMED

Customer letters 2019: HLP 32 / 46 — years, no complaints

Two contractors confirmed in writing the results of years of using Gazpromneft products in their equipment fleets — naming Hydraulic HLP-32 / HLP-46 directly.



Representation (Branch) of "Akkord Industry Construction Investment Corporation" OJSC
in Georgia
"AkkordGeorgia"

No. AG-1431 June 27, 2019

Representation (Branch) of "Akkord Industry Construction Investment Corporation" OJSC in Georgia "AkkordGeorgia" works on major infrastructural construction projects in Georgia; its car fleet comprises motor vehicles from Iveco, Man, and New Holland.

Since May 2017, our Company started its cooperation with Wissol Auto Express, LTD, authorized distributor supplying lubricants produced by Gazpromneft-Lubricants, LTD.

For our motor vehicles, the following oils were selected:

1. Multipurpose oil G-Special TO-4 30
2. Hydraulic oil Gazpromneft Hydraulic HLP-46
3. Transmission oil Gazpromneft ATF DX III
4. Transmission oil Gazpromneft GL-4 80W90
5. Motor oil Gazpromneft Diesel Premium 10W40
6. Motor oil Gazpromneft Diesel Prioritet 15W40
7. Grease Gazpromneft EP 2

There were no quality complaints within the period of work with Wissol Auto Express, LTD. When using the products of Gazpromneft-Lubricants, LTD, the main engine performances stayed within normal limits with the decreased volume of oil refill due to burning. Functioning of automatic transmissions and hydraulic boosters is characterized by smooth shifting and lack of vibration. Company also renders professional assistance for selection of Gazpromneft products. Expenses for motor vehicle maintenance were reduced because of enhanced motor capacities and cost savings.

Wissol Auto Express, LTD is a reliable, fair and time-proved supplier of lubricants for our Company.

We appreciate our cooperation and hope to maintain partnership relations for many years.

Yours faithfully,
Director
Mazakhir Abdullaev

No. 4, Besiki Street, 232 Office, Tbilisi, Georgia, tel: +995 322 3844 00, E-mail: Georgia@akkord.az/ Web: www.akkord.az

AKKORD · AkkordGeorgia

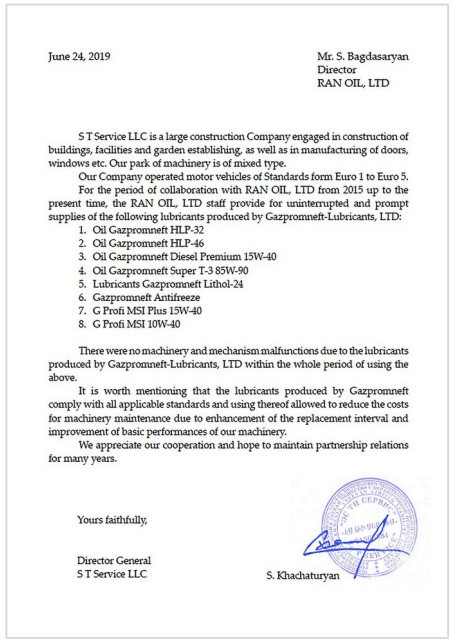
Letter No. AG-1431 of 27.06.2019 · HLP-46 · since 2017

Equipment: hydraulics of construction and road machinery and Iveco, MAN, New Holland trucks

"No quality complaints arose over the whole period of use"

"Power steering operation is smooth, no vibration"

"Equipment maintenance costs went down"



June 24, 2019

Mr. S. Bagdasaryan
Director
RAN OIL, LTD

S T Service LLC is a large construction Company engaged in construction of buildings, facilities and garden establishing, as well as in manufacturing of doors, windows etc. Our park of machinery is of mixed type.

Our Company operated motor vehicles of Standards form Euro 1 to Euro 5.

For the period of collaboration with RAN OIL, LTD from 2015 up to the present time, the RAN OIL, LTD staff provide for uninterrupted and prompt supplies of the following lubricants produced by Gazpromneft-Lubricants, LTD:

1. Oil Gazpromneft HLP-32
2. Oil Gazpromneft HLP-46
3. Oil Gazpromneft Diesel Premium 15W-40
4. Oil Gazpromneft Super T-3 85W-90
5. Lubricants Gazpromneft Lithol-24
6. Gazpromneft Antifreeze
7. G Profi MSI Plus 15W-40
8. G Profi MSI 10W-40

There were no machinery and mechanism malfunctions due to the lubricants produced by Gazpromneft-Lubricants, LTD within the whole period of using the above.

It is worth mentioning that the lubricants produced by Gazpromneft comply with all applicable standards and using thereof allowed to reduce the costs for machinery maintenance due to enhancement of the replacement interval and improvement of basic performances of our machinery.

We appreciate our cooperation and hope to maintain partnership relations for many years.

Yours faithfully,

Director General
S T Service LLC
S. Khachaturyan

S T SERVICE LLC

Letter of 24.06.2019 · HLP-32 and HLP-46 · since 2015

Equipment: mixed fleet of Euro 1–5 construction machinery and door and window production equipment

"Not a single machine or mechanism failure due to lubricants over the whole period"

"Lower maintenance costs thanks to longer drain intervals"

"Comply with all applicable standards"

THE COMPANY Georgian office of Akkord Industry Construction Investment Corporation (Baku) — a major construction and investment holding: roads, bridges, infrastructure.

THE COMPANY Large construction company: buildings and structures, landscaping, in-house door and window production.

Original letters in English are in the FEOTECH archive; quotes translated by FEOTECH. The letters cover the full range of Gazpromneft products in the customer's fleet; operating hours are not given.

Behind these letters are thousands of machines on Gazpromneft oils worldwide: HLP runs at contractors for years, and they are ready to confirm it in writing

Sources: letter of the Georgian office of Akkord Industry Construction Investment Corporation OJSC No. AG-1431 of 27.06.2019 (M. Abdullayev) · letter of S T Service LLC of 24.06.2019 (S. Khachaturyan) — addressed to distributors Wissol Auto Express / RAN OIL. Scale of Gazpromneft product use — manufacturer's data (slide 4: ≈ 1 bn L of hydraulic oils).

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BOSCH REXROTH: HLP QUALIFICATION IN FIGURES

RDE 90240 test matrix for HLP 32 / 46 / 68, supported by official Fluid Rating List RDE 90245 letters.

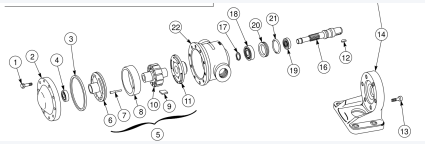
01 QUALIFICATION SYSTEM

RDE 90245

FLUID RATING LIST

1. **RDE 90235**
   Requirements for mineral HLP / HVLP oils
2. **RDE 90240**
   Full qualification test matrix, October 2014
3. **RDE 90245**
   Rating and listing confirmation letters

VANE PUMP AND COMPONENTS

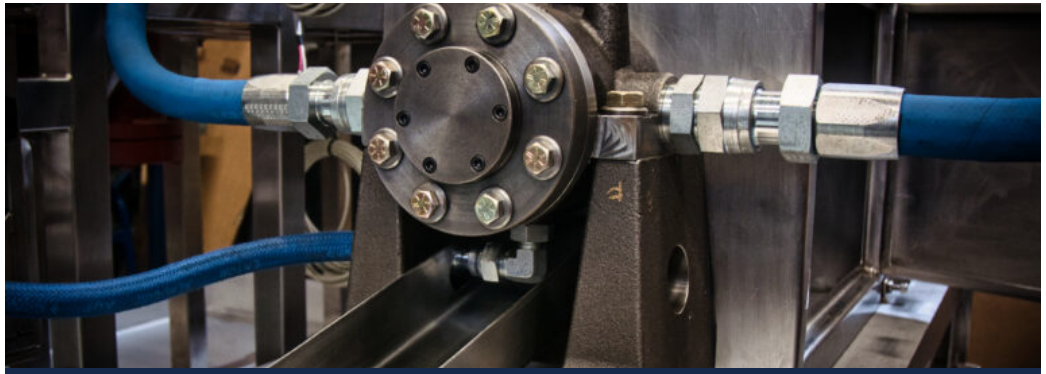


Component illustration. Eaton Vickers I-3100-S.

02 V-104 PUMP TEST

HLP ISO VG 32

DIN EN ISO 20763, method A



V104C VANE PUMP · TEST EQUIPMENT ILLUSTRATION

HLP 32 / 46 / 68 qualification matrix · October 2014

Parameter	VG 32	VG 46	VG 68	Limit
TOST, h to TAN 2.0	**3,037**	**2,800**	**1,567**	**≥ 1,500**
Demulsibility 54 °C, min	14	20	25	≤ 30
FZG, stage	10	11	11	≥ 10
Air release, min	3.5	5.1	8.1	≤ 5/10/13
NBR / FKM elastomers	pass	pass	pass	within limits

03 RESULTS AND QUALIFICATION HISTORY

V-104 · HLP ISO VG 32

5 mg
CAM RING WEAR
Limit 75 mg

2 mg
VANE WEAR
Limit 15 mg

Gazpromneft Hydraulic HLP
ISO VG 32 / 46
BR-1010-0021
ISO VG 68
BR-1010-0042
RDE 90245

Qualification history

CAM RING — **15× BELOW LIMIT**

HLP 32: 5 mg — Limit: 75 mg

VANES — **7.5× BELOW LIMIT**

HLP 32: 2 mg — Limit: 15 mg

Confirmation 02.11.2016
Extension letters 21.06.2021

ALL MATRIX CRITERIA PASSED · VG 32 / 46 TOST AROUND 2× THE MINIMUM REQUIREMENT

Sources: "October 2014 GPN HLP" matrix, RDE 90240, cl. 11.2a (VG 32: ring 5/75 mg, vanes 2/15 mg); Bosch Rexroth letters 02.11.2016 and 21.06.2021.
V104C photo: Tribologie Mannheim; component diagram: Eaton Vickers I-3100-S. Equipment illustrations, not the HLP sample test rig. Application follows OEM requirements.

VERIFIED, NOT JUST CLAIMED

Eaton Vickers: 35VQ25 vane pump wear test

ATS-373 / ASTM D6973: three different pumps run on one oil fill — then every wearing part is weighed to the milligram.

01 · TEST SYSTEM

35VQ25

INDUSTRY STANDARD
VANE PUMP TESTING

Method

- Eaton ATS-373
- ASTM D6973
- Brochure 03-401-2010 Rev 1
- E-FDGN-TB002-E

EATON APPROVAL · E-FDGN-TB002-E

Eaton grants approval by letter after reviewing the 35VQ25 results — the specification is listed in the Gazpromneft TDS

02 · TEST CONDITIONS

93 °C	207 bar	3 × 50 h
tank temperature	outlet pressure	on three pumps · one oil

ONE FILL — THREE PUMPS IN SEQUENCE

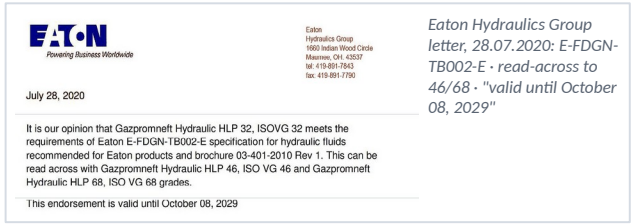
PUMP 1 50 h → PUMP 2 50 h → PUMP 3 50 h

03 · PASS CRITERION — PERMISSIBLE WEAR

VANES	CAM RING
≤ 15 mg	≤ 75 mg



35VQ25 test rig · photo: Gazpromneft Lubricants presentation



EATON
Powering Business Worldwide

Eaton
Hydraulics Group
1660 Indian Wood Circle
Maumee, OH 43537
tel: 419-891-7843
fax: 419-891-7790

July 28, 2020

It is our opinion that Gazpromneft Hydraulic HLP 32, ISOVG 32 meets the requirements of Eaton E-FDGN-TB002-E specification for hydraulic fluids recommended for Eaton products and brochure 03-401-2010 Rev 1. This can be read across with Gazpromneft Hydraulic HLP 46, ISO VG 46 and Gazpromneft Hydraulic HLP 68, ISO VG 68 grades.

This endorsement is valid until October 08, 2029

Eaton Hydraulics Group letter, 28.07.2020: E-FDGN-TB002-E · read-across to 46/68 · "valid until October 08, 2029"

APPROVED

Eaton E-FDGN-TB002-E

Eaton Hydraulics Group letter of 28.07.2020: Gazpromneft Hydraulic HLP 32 meets specification E-FDGN-TB002-E and brochure 03-401-2010 Rev 1

VALID UNTIL 08.10.2029

READ-ACROSS TO VG 46 / 68

The approval extends to HLP 46 and HLP 68 — the same additive technology as in the tested HLP 32

CONTINUITY

- **2010** first Eaton endorsement · HLP 32 · Brochure 694
- **2020** current approval · E-FDGN-TB002-E

The Eaton approval is valid until 2029: your Vickers vane pumps are protected by an oil that passed a wear test measured to the milligram

Sources: Eaton Hydraulics Group letters of 17.05.2010 (Brochure 694) and 28.07.2020 (E-FDGN-TB002-E, "endorsement valid until October 08, 2029", read-across to HLP 46/68) · test conditions described per Gazpromneft Lubricants technical presentation (ATS-373 / ASTM D6973, 35VQ25).

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VERIFIED, NOT JUST CLAIMED

Parker Denison: HF-0 qualification — dry and wet pump test

HF-0 is Denison's highest qualification level: dry and wet test of piston and vane pumps. HLP holds HF-0 / HF-1 / HF-2 approvals.

01 · QUALIFICATION SYSTEM

HF-0

HIGHEST LEVEL AMONG
DENISON HF FLUID CLASSES

- HF-0 · piston + vane, dry and wet
- HF-1 · piston pumps
- HF-2 · vane pumps

APPROVED

Parker Denison HF-0 · HF-1 · HF-2

approvals No. 405(1) of 26.01.2010 and No. 624(1) of 06.09.2017 · HLP 32 / 46 / 68 · entered in the Denison approved fluids list

qualification documents: OEM registry, slide 22

02 · T6H20C PUMP TEST SEQUENCE

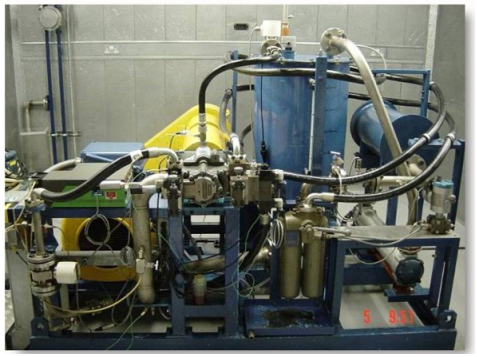
608 h
total duration

1 %
water in oil · wet phase

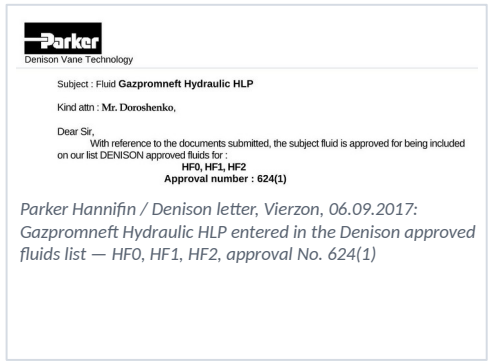
2 pumps
piston + vane

"DRY" PHASE	"WET" PHASE
300 h · 110 °C · 0 % water	300 h · 80 °C · 1 % water

2,100 rpm · 28 MPa · permissible wear: pistons < 300 mg · vanes < 15 mg



Denison piston pump test rig · 200 L charge under continuous load · photo from Gazpromneft Lubricants technical presentation



Parker
Denison Vane Technology

Subject : Fluid **Gazpromneft Hydraulic HLP**

Kind attn : **Mr. Doroshenko,**

Dear Sir,
With reference to the documents submitted, the subject fluid is approved for being included on our list DENISON approved fluids for :
HF0, HF1, HF2
Approval number : 624(1)

Parker Hannifin / Denison letter, Vierzon, 06.09.2017: Gazpromneft Hydraulic HLP entered in the Denison approved fluids list — HF0, HF1, HF2, approval No. 624(1)

03 · WHY IT MATTERS IN THE TROPICS

Humidity, tank condensation, equipment washdown — water in Indonesian hydraulics is real. The HF-0 wet phase makes the oil prove anti-wear protection with 1 % water in the system.

PISTON PUMP
high-pressure axial piston circuit

VANE PUMP
industrial vane pumps

WATER IN OIL
wear protection at 1 % water

What this means for you: pump protection with water in the oil is confirmed by the pump maker, not the oil supplier — HLP is approved to the top Denison class HF-0

Tank water is tropical reality: Parker Denison approved HLP to HF-0, so the pump is protected even with 1 % water in oil

Sources: Parker Hannifin / Denison Vane Technology letters 26.01.2010 (No. 405(1)) and 06.09.2017 (No. 624(1)), HF-0/1/2 for HLP 32/46/68. T6H20C test: TP-30533, 2,100 rpm, 28 MPa, 300 h dry and 300 h with 1% water. Historical qualification evidence. Application follows current OEM requirements.

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VERIFIED, NOT JUST CLAIMED

Five machine builders approved HLP in writing

Not only pump makers: builders of injection moulding, blow moulding and machine tools approved Gazpromneft Hydraulic HLP in writing — including for the warranty period.

ENGEL

HLP 46

Schwertberg, Austria · injection moulding machines and automation · family company since 1945 · €1.4 bn · ≈ 7,000 employees

Letter of ENGEL LLC (service), 22.11.2011: use in ENGEL equipment confirmed, including during the warranty period

2011

BEKUM

HLP 46

Berlin, Germany · extrusion blow moulding machines since 1959 · > 18,000 machines delivered · plants in Germany, Austria, USA

BEKUM Maschinenfabriken letters, 16 and 25.03.2010: recommended for hydraulics of BEKUM blow moulding machines of all series and years

2010

SUMITOMO (SHI) DEMAG

HLP 68

Schwaig, Germany · injection moulding machines · Sumitomo Heavy Industries group (Japan) · ≈ 3,000 employees · > 100,000 machines installed

Ref. No. 504 of 04.02.2010: meets DIN 51524 part 2 — suitable for hydraulics of Sumitomo Demag IMMs of all series and years

2010

WITTMANN BATTENFELD

HLP 46

Kottingbrunn, Austria · IMMs (Battenfeld brand since 1948) · WITTMANN group: machines, robots, auxiliaries

Operating manual, ch. 8.4 "Hydraulic oil table": Gazpromneft Hydraulic HLP 46 listed alongside SH · TLS 46 and MB · DT 25

listing

WOOJIN PLAIMM

HLP range

Republic of Korea · injection moulding machines 30–3,000+ t · since 1985 · listed on the Korea Exchange · Korea's leading IMM maker

Representative office letter 12.02.2015: Gazpromneft Hydraulic HLP series suitable for Woojin IMMs of all series and build dates

2015

BELTRAMELLI

via Rexroth status

Stezzano (Bergamo), Italy · manufacture and machining of large industrial equipment

Letter 27.05.2010: all Gazpromneft oils officially approved by Bosch Rexroth are accepted — conditional approval

2010

Your benefit: if your fleet is ENGEL, Sumitomo Demag, Battenfeld, BEKUM or Woojin, you already hold a written basis to use HLP — no enquiries to the maker

Sources: letters ENGEL 22.11.2011 · BEKUM wk-es010022 / wk-es010024 (16/25.03.2010) · Sumitomo (SHI) Demag No. 504 of 04.02.2010 · Wittmann Battenfeld manual EP6DE0SA / HM4DE0SC, ch. 8.4 (requirement: oil pre-filtered to 17/15/12) · Woojin Plaimm 12.02.2015 · Beltramelli 27.05.2010. Letters are historical, with no expiry; class and conditions — per document. Company profiles — per their official websites and public reports (10.2026), see slide 28.

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VERIFIED, NOT JUST CLAIMED

Officially received OEM approvals and recommendations

Qualification history supported by pump tests, approval letters, equipment manuals and Indonesian product registration.

DOCUMENT / REFERENCE	ISO VG	DOCUMENTED EVIDENCE
Eaton - E-FDGN-TB002-E (35VQ25) letters 17.05.2010 and 28.07.2020	32 / 46 / 68	Approval obtained, read-across to VG 46/68
Bosch Rexroth - BR-1010-0021 confirmation 02.11.2016, extension 21.06.2021	32 / 46	Official listing confirmation received
Bosch Rexroth - BR-1010-0042 HLP 68, extension letter 21.06.2021	68	Official listing confirmation received
Bosch Rexroth - RDE 90240 full DIN 51524-2 + BR test matrix, October 2014	32 / 46 / 68	Qualification matrix passed
Parker Denison - HF-0/1/2 - No. 405(1) letter 26.01.2010	32 / 46 / 68	HF-0 / HF-1 / HF-2 approvals obtained
Parker Denison - HF-0/1/2 - No. 624(1) letter 06.09.2017	32 / 46 / 68	HF-0 / HF-1 / HF-2 approvals obtained
MAG Cincinnati - P-68 / P-70 / P-69 letter 13.05.2009	32 / 46 / 68	P-spec qualification documented
ENGEL / BEKUM / Sumitomo Demag / Woojin letters 2010-2015, incl. ENGEL warranty acceptance	46 / 68	Written equipment-maker acceptance
Wittmann Battenfeld - manual 8.4 table of recommended oils	46	Equipment-manual recommendation
Komatsu Mining Germany - AH12518a HLP 68: 0 to +40 °C, HLP 100: +5 to +48 °C	46 / 68 / 100	OEM grade / temperature reference
Voith Turbo - D-0503.1 (01.2024) proposed operating fluids, cl. 3.4	32	OEM operating-fluid reference
NPT Indonesia - SNI 7069.9:2022 730/NPT/DMT/2025, 10/NPT/DMT/2026	32 / 46 / 68 / 100	Indonesian product registration

OEM tests and written approvals obtained: a documented technical basis for selecting HLP for your equipment.

Primary documents in the FEOTECH archive record qualifications and approvals obtained. Equipment-specific selection follows current OEM requirements. Voith D-0503.1 lists proposed operating fluids (HLP 32, cl. 3.4).

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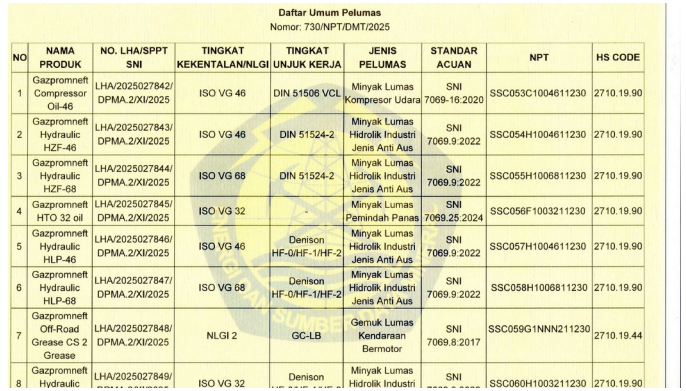
VERIFIED, NOT JUST CLAIMED

Four HLP grades: Indonesian NPT and stock in Jakarta

NPT (Nomor Pelumas Terdaftar) of the Ministry of Energy and Mineral Resources — mandatory lubricant registration; local stock and batch documents — with every delivery.

Product	NPT	Standard	Document	Expiry
Hydraulic HLP-32	SSC072H1003211230	SNI 7069.9:2022	10/NPT/DMT/2026	12.2030
Hydraulic HLP-46	SSC057H1004611230	SNI 7069.9:2022	730/NPT/DMT/2025	12.2030
Hydraulic HLP-68	SSC058H1006811230	SNI 7069.9:2022	730/NPT/DMT/2025	12.2030
Hydraulic HLP-100	SSC073H1010011230	SNI 7069.9:2022	10/NPT/DMT/2026	12.2030

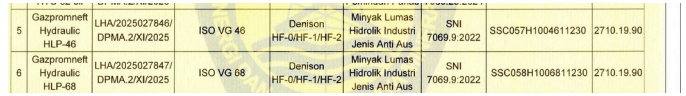
Holder: PT FEO OIL INDONESIA · issued by ESDM / Ditjen Migas · property level in NPT: Denison HF-0/1/2 · same registration — HZF-46/68 and HVLP-32



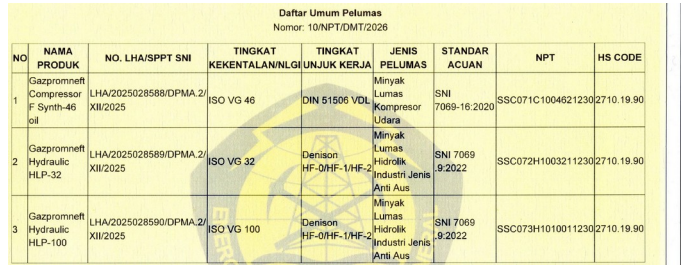
Daftar Umum Pelumas
Nomor: 730/NPT/DMT/2025

NO	NAMA PRODUK	NO. LHA/SPPT SNI	TINGKAT KEKENTALAN/NLGI	TINGKAT UNJUK KERJA	JENIS PELUMAS	STANDAR ACUAN	NPT	HS CODE
1	Gazpromneft Compressor Oil-46	LHA/2025027842/ DPMA.2/XI/2025	ISO VG 46	DIN 51506 VCL	Minyak Lumas Kompresor Udara	SNI 7069-16:2020	SSC053C1004611230	2710.19.90
2	Gazpromneft Hydraulic HZF-46	LHA/2025027843/ DPMA.2/XI/2025	ISO VG 46	DIN 51524-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC054H1004611230	2710.19.90
3	Gazpromneft Hydraulic HZF-68	LHA/2025027844/ DPMA.2/XI/2025	ISO VG 68	DIN 51524-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC055H1006811230	2710.19.90
4	Gazpromneft HTO 32 oil	LHA/2025027845/ DPMA.2/XI/2025	ISO VG 32	-	Minyak Lumas Pemindah Panas	SNI 7069.25:2024	SSC056F1003211230	2710.19.90
5	Gazpromneft Hydraulic HLP-46	LHA/2025027846/ DPMA.2/XI/2025	ISO VG 46	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC057H1004611230	2710.19.90
6	Gazpromneft Hydraulic HLP-68	LHA/2025027847/ DPMA.2/XI/2025	ISO VG 68	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC058H1006811230	2710.19.90
7	Gazpromneft Off-Road Grease CS 2 Grease	LHA/2025027848/ DPMA.2/XI/2025	NLGI 2	GC-LB	Gemuk Lumas Kendaraan Bermotor	SNI 7069.8:2017	SSC059G1NNN211230	2710.19.44
8	Gazpromneft Hydraulic	LHA/2025027849/	ISO VG 32	Denison	Minyak Lumas Hidrolik Industri	SNI	SSC060H1003211230	2710.19.90

Daftar Umum Pelumas No. 730/NPT/DMT/2025 — lines 5–6: HLP-46 and HLP-68



5	Gazpromneft Hydraulic HLP-46	LHA/2025027846/ DPMA.2/XI/2025	ISO VG 46	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC057H1004611230	2710.19.90
6	Gazpromneft Hydraulic HLP-68	LHA/2025027847/ DPMA.2/XI/2025	ISO VG 68	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069.9:2022	SSC058H1006811230	2710.19.90



Daftar Umum Pelumas
Nomor: 10/NPT/DMT/2026

NO	NAMA PRODUK	NO. LHA/SPPT SNI	TINGKAT KEKENTALAN/NLGI	TINGKAT UNJUK KERJA	JENIS PELUMAS	STANDAR ACUAN	NPT	HS CODE
1	Gazpromneft Compressor F Synth-46 oil	LHA/2025028588/DPMA.2/ XII/2025	ISO VG 46	DIN 51506 VDL	Minyak Lumas Kompresor Udara	SNI 7069-16:2020	SSC071C1004621230	2710.19.90
2	Gazpromneft Hydraulic HLP-32	LHA/2025028589/DPMA.2/ XII/2025	ISO VG 32	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069 9:2022	SSC072H1003211230	2710.19.90
3	Gazpromneft Hydraulic HLP-100	LHA/2025028590/DPMA.2/ XII/2025	ISO VG 100	Denison HF-0/HF-1/HF-2	Minyak Lumas Hidrolik Industri Jenis Anti Aus	SNI 7069 9:2022	SSC073H1010011230	2710.19.90

No. 10/NPT/DMT/2026 — lines 2–3: HLP-32 and HLP-100

SUPPLY FROM FEOTECH STOCK · GREATER JAKARTA





Gazpromneft 205 L drums and pails — manufacturer's photo

20 L
HLP 32 · 46 · 68

50 L
HLP 46

205 L
HLP 46 · 68 · 100

With every delivery: batch CoA · TDS and SDS · NPT · import documents · on request — OEM letters and reports

For procurement: legal circulation · link to SNI 7069.9:2022 · HLP / HZF / HVLP from one source · stock, batch and validity — as of the offer date

Your benefit: the product is already registered in Indonesia and held in Jakarta — delivery in days, not weeks, and no "where are the documents?"

Sources: NPT 596.NPT/MG.06.02/DMT/2025 (No. 730/NPT/DMT/2025, issued 31.12.2025, to 03.12.2030) and 23.NPT/MG.06.02/DMT/2026 (No. 10/NPT/DMT/2026, issued 19.01.2026, to 12.12.2030). NPT is product registration, not SNI certification and no substitute for OEM approvals. Pack sizes — per FEOTECH supply history. Packaging photos — Gazpromneft Lubricants corporate materials.

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When the requirement differs — the Gazpromneft range has it

FEOTECH selects the fluid to the manual's requirement and system conditions. Four typical cases where HLP is not the answer, and what we offer instead.

Wide temperature range · mobile equipment · cold start

→ Hydraulic HVLP 10 · 15 · 22 · 32 · 46 · 68

DIN 51524-3 · ISO 11158 HV · VI ≈ 143–144 · HVLP-32 registered in NPT 730/2025

stable viscosity across temperature swings — excavators, cranes, port equipment, open sites

Zinc-free requirement · silver-bearing parts · servo valves

→ Hydraulic HZF 32 · 46 · 68 · 100

DIN 51524-2 (ashless AW) · HZF-46/68 registered in NPT 730/2025

anti-wear protection without zinc — where the OEM bans ZDDP

Fire-hazard area · casting · furnaces · hot presses

→ Fire-resistant HFC / HFDU fluid to OEM specification

ISO 12922 · selected from the maker's catalogue to OEM requirement

high flash point of mineral HLP (220–243 °C) ≠ fire resistance

Water & dirt unavoidable · special OEM prescription · synthetic

→ Hydraulic HLPD / HVLPD · G-Special Power HVLP · Hydraulic Nord-32

DIN 51524-2/-3 · detergent-dispersant · synthetic high-VI · ultra-high-VI

selection via FEOTECH with maker's confirmation

Your benefit: one supplier covers all hydraulic needs of the plant — HLP, HVLP, HZF and special fluids, registered in Indonesia and matched to the OEM

Sources: Gazpromneft Lubricants catalogue · product TDS (HVLP VI 143–144 per TDS) · NPT No. 730/2025 (HZF-46/68, HVLP-32) · DIN 51524 · ISO 12922 · OEM requirements of the specific component. Product names and availability are checked against the current catalogue before an offer is issued; NPT registration of products not listed here is to be confirmed.

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Switching from SH or MB — a routine oil change, no project

Lab evaluation of Gazpromneft Hydraulic HLP 46 blends with MB · DT 25 and SH · TLS 46 at 10 / 50 / 90 % — residue of the previous oil takes no parameter out of spec.

Parameter of 10 / 50 / 90 % blends	Result	Limit
Appearance	clear, homogeneous	—
Viscosity at 40 °C, mm²/s	43.81 – 46.26	41.4 – 50.6
Air release at 50 °C, min	4′30″ – 6′48″	≤ 10
Dry filterability ISO 13357-2, F1 / F2	83–99 % / 69–101 %	≥ 80 % / ≥ 66 %
After 2 weeks' storage	clear, homogeneous	—

Gazpromneft Lubricants letters to Revda Non-Ferrous Metals Plant (shop 38) No. SM-09-10/2242 and No. SM-09-10/2243 of 20.12.2010 with annex — lab evaluation of HLP 46 blends with MB · DT 25 and SH · TLS 46



all three blends clear and homogeneous; all parameters within limits

GENERAL RULE

Mineral HLP oils to DIN 51524-2 of the same group and viscosity grade are replaced by a normal drain and fill; flushing is needed only with unknown or degraded oil, water, another fluid type or by OEM requirement.

FIVE STEPS OF A MANAGED CHANGEOVER

01 — Check OEM requirements and current oil

class, viscosity, seals, fluid type

02 — Agree drain, cleaning and filters

residue ≤ 10–15 % acceptable for HLP → HLP of same group

03 — Link the batch to its CoA

CoA of your batch — before fill

04 — Fill through a filter

target ISO 4406 class — per machine manual

05 — Take a baseline sample

reference point for monitoring: viscosity · TAN · water · ISO 4406

Your benefit: switch from MB · DT 25 or SH · TLS 46 — at a scheduled change, with no extra flushing: blend compatibility verified in the lab

Sources: Gazpromneft Lubricants letters No. SM-09-10/2242 and No. SM-09-10/2243 of 20.12.2010 to Revda Non-Ferrous Metals Plant (shop 38) with annex — lab evaluation of HLP 46 blends with MB · DT 25 and SH · TLS 46. Formulation data of that period; HFC, ester, HLPD and unknown fluids — separate procedure per OEM (Bosch Rexroth RE 90220). MB, SH, TLS, DT are trademarks of their owners; cited only to confirm compatibility.

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NEXT STEP · PILOT ON YOUR EQUIPMENT

One unit, one batch, a joint report

The proof is built at your site: controlled fill, scheduled samples, lab report — and a fleet-wide decision on your own data.

01 BASELINE

Select the unit and record its baseline

pump model · oil temperature · current oil · tank volume · baseline analysis (viscosity, TAN, water, ISO 4406, metals)

02 CONTROL

Controlled fill and early check

batch with CoA · fill through a filter · sample after filling · early check at 100–250 h

03 REPORT

Scheduled samples and joint report

500 / 1,000 h per agreed programme · same analysis methods · limits and actions on deviation agreed in advance



WHAT WE NEED FROM YOU TO PREPARE THE SELECTION AND OFFER

Equipment and pump model

and oil class required by the manual

Oil temperature in tank

start-up and steady state

Current oil and system volume

brand, fill date, tank volume

Pack size and schedule

20 / 50 / 205 L · delivery frequency

In return: grade selection, TDS/SDS, batch CoA, NPT, supply documents and a commercial offer — usually within 2 working days

Send the equipment model, oil temperature and system volume — FEOTECH will prepare the selection, offer and pilot programme

Pilot programme, sampling schedule and commercial terms are agreed individually. 100–250 / 500 / 1,000 h are project checkpoints, not drain intervals. Analysis limits and actions on deviation are fixed before start; at signs of a fault we do not wait for the next checkpoint.

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Application in accordance with OEM requirements

FEOTECH ENERGY NUSANTARA

Powered by Experience. Driven by People.

Company information

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GAZPROMNEFT

Who stands behind the references: customers and equipment makers

Short profiles of companies from the field cases and OEM registry — scale, specialisation, country. Data — official websites and public reports of the companies, as of 10.2026.

01 · CUSTOMERS — FIELD CASES (SLIDES 15–17)

ChTPZ · TMK

Chelyabinsk, Russia · pipe metallurgy

Chelyabinsk Pipe-Rolling Plant (since 1942) — one of Russia's largest pipe makers; part of TMK, the country's largest pipe holding, since 2021. Case: two SMS Meer presses of the large-diameter pipe line "Vysota 239" (started 2010), 40 t of HLP 46.

SMS Meer GmbH — tube and forging division of SMS group (Germany): family-owned engineering group, ≈ 14,000 employees, new orders €3.6 bn (2024).

VSMPO-AVISMA

Verkhnyaya Salda, Russia · titanium metallurgy

One of the world's largest full-cycle titanium producers (sponge → ingots → forgings): ≈ 90 % of Russia's titanium, ≈ 19,000 employees, exports to 50 countries; historic supplier to aerospace (Boeing, Airbus, Rolls-Royce). Case: hydraulic screw forging press, shop 22, HLP-32, 7 months.

Hasenclever (Düsseldorf) — German maker of forging presses and forging machines, now part of SMS group.

02 · COMPONENT AND MACHINE MAKERS — OEM REGISTRY (SLIDES 12, 18–22)

Company	Country · headquarters	Specialisation	Scale	In this deck
Eaton Hydraulics · Vickers	USA → Danfoss (Denmark)	pumps, motors, valves; Vickers brand; since 08.2021 — Danfoss Power Solutions	$3.3 bn deal · ≈ 10,000 employees	to 2029 · sl. 19, 22
Bosch Rexroth	Germany, Lohr am Main	industrial and mobile hydraulics; Bosch group; RDE 90245 (HLP 32/46/68)	≈ €7 bn · > 30,000 employees	RDE 90245 · sl. 18, 22
Parker Hannifin · Denison	USA · Vierzon (France)	motion and control systems; Denison — pumps, HF-0/1/2 specification	≈ $20 bn · ≈ 60,000 employees	HF-0 · sl. 20, 22
Fives · Cincinnati Machine	France / USA	metal-cutting machine tools; Cincinnati Machine → MAG → Fives (2013)	international engineering group	P-68/69/70 · sl. 22
ENGEL	Austria, Schwertberg	injection moulding machines and automation; family company since 1945	€1.4 bn (2025/26) · ≈ 7,000 staff	HLP 46 + warranty · sl. 21
Sumitomo (SHI) Demag	Germany, Schwaig · Japan	IMMs of all types; Sumitomo Heavy Industries group	≈ 3,000 staff · > 5,000 machines/year	HLP 68 · sl. 21
BEKUM	Germany, Berlin	extrusion blow moulding machines; plants in Germany, Austria, USA	since 1959 · > 18,000 units	HLP 46 · sl. 21
WITTMANN BATTENFELD	Austria, Kottingbrunn	IMMs (Battenfeld since 1948); WITTMANN group	international group	in the manual · sl. 21
Woojin Plaimm	Republic of Korea	IMMs 30–3,000+ t; since 1985; exchange-listed	Korea's leading IMM maker	HLP series · sl. 21
Beltramelli S.p.A.	Italy, Stezzano	manufacture of large industrial equipment	family company	conditional · sl. 21
Komatsu Mining Germany	Germany, Düsseldorf	PC3000–PC8000 mining hydraulic excavators	Komatsu group	AH12518a · sl. 12, 22

Your benefit: behind every document stands a world-class company; choosing HLP, you rely on their test rigs, manuals and presses, not on a supplier's promises

Sources: official websites and public reports of the companies (ENGEL 2025/26 · SMS group 2024 · Sumitomo (SHI) Demag · BEKUM · Danfoss / Eaton, 08.2021 · TMK / ChTPZ, 2021 · VSMPO-AVISMA); figures rounded and given for scale, as of 10.2026. Profiles are a FEOTECH reference, not company statements on the product; document status — per slide 22.

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Data sources of this presentation

Every figure on the slides has a document, method and date. The full evidence registry is open to customer engineers on request.

Manufacturer, platform and market (slides 2–5)

- gazpromneft-sm.ru/about · gazpromneft-oil.ru/ru/brand/production · gazprom-neft.ru/company/retail/lubricants

- Gazpromneft Lubricants catalogue "Solutions for your business" 2025 — 590 kt/year, supply geography · ≈ 1 bn L of hydraulic oils — manufacturer's estimate (slide 4)
- Corporate profile of PT FEOTECH Energy Nusantara
- Mordor Intelligence, Indonesia Lubricants 2019–2029 · ESDM, publication 08.12.2025 (smelters)

Engineering and product (slides 6–14)

- TDS Gazpromneft Hydraulic HLP 32/46/68/100, rev. 05/2026
- CoA No. 7272 of 19.09.2024, batch 2415160801 (HLP-46) · CoA No. 7338 of 21.09.2024, batch 2415161701 (HLP-68: GOST 17216 class 6, ISO 13/10/7) · STO 84035624-002-2014
- Test report to Bosch Rexroth RDE 90240 requirements, October 2014 (HLP 32/46/68); results matrix "October 2014 GPN HLP", cl. 11.2a — V-104 (DIN EN ISO 20763, method A): ring 5 / 75 mg, vanes 2 / 15 mg

- ASTM D341 (Walther) — viscosity calculated from TDS data · ISO 3448 · ISO 4406 · DIN 51524-2 · ISO 11158
- Komatsu Mining Germany, Parts & Service News AH12518a, 08.07.2013
- ISO 6743-4:2015 · ISO 11158 · DIN 51524-1/-2/-3 · ISO 12922 · ISO 15380 — classification of hydraulic fluids

Cleanliness model (sl. 13)

- Pall Corporation / BHRA contamination–life model (Q ≈ 190 L/min) — as in the FEOTECH HVLP deck; life values are illustrative

Photos and graphics

- Cover — Bosch Rexroth press materials (media assets) · ChTPZ, "Vysota 239" shop — chtpz.tmk-group.ru · VSMPO-AVISMA — vsmpo.ru (media centre) · Gazpromneft Lubricants materials and FEOTECH archive (plant, warehouse, packaging, lab) · diagrams and icons — FEOTECH graphics

OEM (slides 18–22)

- Eaton Hydraulics Group — letters 17.05.2010 and 28.07.2020, E-FDGN-TB002-E (ATS-373 / ASTM D6973, 35VQ25), valid to 08.10.2029
- Bosch Rexroth — Confirmation 02.11.2016 and Confirmations of extension 21.06.2021 (RDE 90245: BR-1010-0021 HLP 32/46; BR-1010-0042 HLP 68)
- Parker Hannifin / Denison — approvals No. 405(1) 26.01.2010 and No. 624(1) 06.09.2017, HF-0/1/2 (T6H20C, TP-30533)

- MAG Cincinnati Machine — letter 13.05.2009, P-68/P-69/P-70
- ENGEL 22.11.2011 · BEKUM 16/25.03.2010 · Sumitomo (SHI) Demag 04.02.2010 · Wittmann Battenfeld, manual ch. 8.4 · Woojin Plaimm 12.02.2015 · Beltramelli 27.05.2010
- Voith Turbo — Directive D-0503.1 "Operating Fluids for Voith Turbo Couplings", version 1 of 30.01.2024, cl. 3.4 · Bosch Rexroth RE 90220-01 (09.2009, 04.2011)

Real field experience and company profiles (slides 15–17, 28)

- Letter of ChTPZ JSC / SMS Meer GmbH on the fill and operation of HLP 46 (2010), 2 pp.
- VSMPO-AVISMA × Ural-neft-service commission report on HLP-32, approved 21.12.2010, 2 pp.
- Customer letters: AkkordGeorgia No. AG-1431 of 27.06.2019 (HLP-46) · S T Service LLC of 24.06.2019 (HLP-32/46)

- Company profiles: official websites and reports of ENGEL, SMS group, Sumitomo (SHI) Demag, BEKUM, WITTMANN, Woojin Plaimm, Danfoss / Eaton (2021), TMK / ChTPZ (2021), VSMPO-AVISMA — as of 10.2026

Indonesia (slide 23)

- NPT 596.NPT/MG.06.02/DMT/2025 (No. 730/NPT/DMT/2025) and 23.NPT/MG.06.02/DMT/2026 (No. 10/NPT/DMT/2026), ESDM / Ditjen Migas
- FEOTECH data on stock and pack sizes — as of the offer date

Compatibility and changeover (sl. 25)

- Gazpromneft Lubricants letters No. SM-09-10/2242 and No. SM-09-10/2243 of 20.12.2010 to Revda Non-Ferrous Metals Plant (shop 38) with annex — HLP 46 blends with MB · DT 25 / SH · TLS 46
- Bosch Rexroth RE 90220 (mixing of fluids)

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