



FCP TIMES

A MONTHLY NEWS LETTER FOR FLUID CONVEYANCE PRODUCTS INDUSTRY

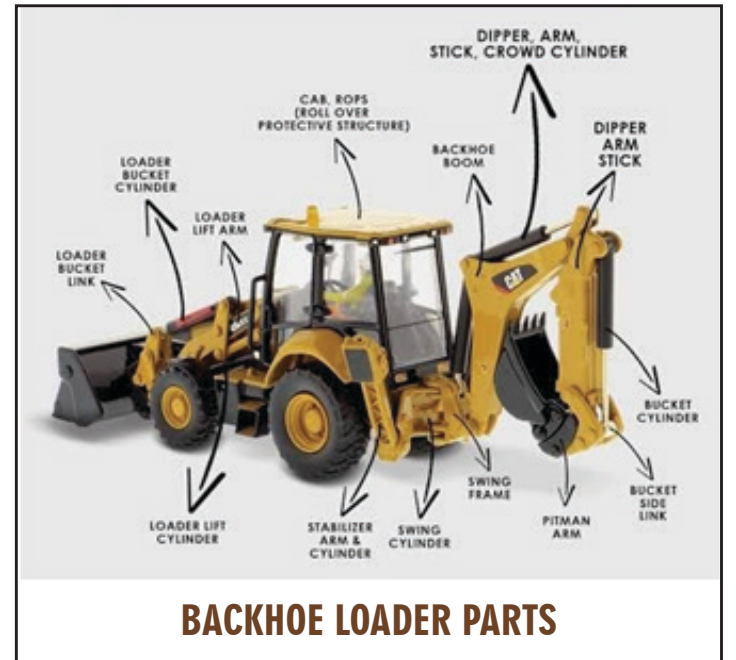


Spare parts used in Heavy Earthmoving and Mining Machines

Construction equipment and heavy earth moving machines are vital for various industries, including construction, mining, infrastructure development, and more. These machines are subjected to rigorous operations and harsh conditions, which can lead to wear and tear over time. To ensure uninterrupted operations and maximize productivity, having a supply of spare parts is crucial. Here, we delve into the essential spare parts used in construction equipment and heavy earth moving machines.



HYDRAULIC EXCAVATOR PARTS



BACKHOE LOADER PARTS

1. Engine Components:

A. Filters:

Oil Filters: Oil Filters, remove contaminants from the engine oil, preventing premature wear of engine components.

Fuel Filters: Fuel Filters, ensure that only clean fuel reaches the engine, preventing fuel system clogs and engine damage.

Air Filters: Air filters are essential for maintaining clean air intake, preventing dust and debris from entering the engine, which can cause engine wear and reduced performance.

B. Belts:

Timing Belts: Timing belts, ensure synchronized operation of engine components, such as camshafts and crankshafts.

Serpentine Belts: Serpentine belts drive auxiliary components like the alternator, water pump, power steering pump, and air conditioning compressor.

C. Gaskets and Seals:

Cylinder Head Gaskets: Cylinder head gaskets, seal the combustion chamber thus preventing leakage of gases and coolant.

Oil Seals: Oil seals prevent oil leakage from engine components, such as crankshafts and camshafts.

Valve Stem Seals: These seals, maintain proper lubrication and prevent oil from entering the combustion chamber.

2. Hydraulic System Parts:

A. Hydraulic Hoses and Fittings:

High-pressure hoses and fittings connect hydraulic components, transmitting pressurized fluid.

B. Hydraulic Cylinders:

Hydraulic Cylinders, actuate various functions like lifting, tilting, and steering in heavy machinery. Single-acting, double-acting, and telescopic cylinders are the various types of hydraulic

cylinders.

C. Hydraulic Pumps and Motors:

Convert mechanical power into hydraulic power, facilitating movement of hydraulic actuators. Types include gear pumps, piston pumps, and hydraulic motors for different applications.

3. Undercarriage Components:

A. Tracks or Tyres: Tracks are composed of track shoes, links, and pins for tracked machines, providing traction and stability.

Tyres are available in various types (radial, bias ply) for wheeled machines, offering mobility on different terrains.

B. Track Chains, Rollers, and Sprockets:

Track chains link the track shoes together, guiding and supporting the machine's weight. Rollers and sprockets facilitate track movement and engagement with the terrain.

C. Idlers and Track Adjusters:

Idlers maintain track tension and alignment, reducing premature wear. Track adjusters enable adjustment of track tension to optimize performance and reduce track wear.

4. Electrical System Parts:

A. Batteries:

Batteries provide electrical power for starting the engine and operating electrical systems when the engine is off. Lead-acid, AGM, and lithium-ion batteries are different types of batteries used in earthmoving Equipments.

B. Alternators and Starters:

Alternators recharge the battery and power electrical systems while the engine is running. Starters engage the engine flywheel to initiate engine combustion.

C. Wiring Harnesses and Connectors:

Wiring harnesses and connectors transmit electrical signals and power between various electrical components, ensuring proper functionality.

5. Wear Parts:

A. Cutting Edges and Teeth:

Essential for excavators, loaders, and dozers, facilitating efficient digging, cutting, and material handling. Available in various materials (e.g., high-carbon steel, tungsten carbide) for different applications.

B. Bucket and Blade Wear Plates:

Protect bucket and blade surfaces from abrasion and impact during operation, extending their lifespan. Made from hardened steel or wear-resistant materials like AR (abrasion-resistant) steel.

C. Ground Engaging Tools (GET):

Improve digging and loading efficiency by enhancing penetration and material retention. Types include bucket teeth, adapters, and cutting edges, designed for specific applications and soil conditions.

Conclusion:

Comprehensive knowledge and availability of spare parts are essential for maintaining construction equipment and heavy earth moving machines in optimal working condition. Regular inspection, preventive maintenance, and timely replacement of worn or damaged parts are critical practices to minimize downtime, ensure safety, and maximize productivity in various industries reliant on these machines. By understanding the specific functions and applications of each spare part category, operators can effectively manage their equipment fleets and achieve long-term success in their operations.

What is skiving, and when should you use it on your hose assemblies?



Skiving is removing the outer cover at the end of a hydraulic hose in the location of the

crimp fitting. For some high-pressure applications, the hose's inner tube ID may be skived to allow the hoes tail to better fit. Using a specialized machine with externally rotating mandrels, the tooling cuts and then peels the outer carcass. Depending on the machine, the skiving process may take thirty to forty-five seconds.

The assembly technician must reference the manufacturer's catalogue to mark the skive's length, which corresponds to the mark length used to subtract the coupling length from the overall length. The coupling length is the distance from the tip of the cut hose to the outside tip of the hose end when the hose is installed. The total length of a hose assembly equals the hose cut length plus the sum of each of the two coupling lengths.

Once the skiving process removes the inner or outer rubber layer(s), the

remaining hose end is left with its steel braids or windings nearly exposed. A single skive leaves only the outer layer exposed, while its combination with a tube skive is often referred to as a double skive. Where single- or double-skived are chosen depends on the rated pressure, with double skiving more often used in very high-pressure applications.

Once skived, the hose end may be fitted and crimped to the hose. Skived hose assemblies require crimp ends specific to the application and are not compatible with non-skive fittings. A skived hose assembly bites into the reinforcement wires, and as such, is dimensioned differently to avoid breaking through the cover.

Skived hose assemblies are used in applications where ultimate reliability under high-pressure conditions is an absolute must. Because the crimp occurs directly on the wire braiding or spiral, the force exerted is across a more stable surface. A skived hose assembly has less chance of failure, and when done correctly, these hoses rarely fail. Many machinery manufacturers swear by the reliability and safety of a skived hose assembly, requiring them for all applications.

YUVRAJ
OVERSEAS PVT. LTD.

At Yuvraj Overseas Pvt Ltd, we take immense pride in being the industry's leading manufacturer of high-quality hydraulic hose-end fittings, adaptors, and customized cold-forged fittings. With a commitment to excellence, we specialize in producing a wide range of fittings, ranging from 1/8" ID to 4" in carbon steel. As a testament to our dedication to quality, we are proud to be an ISO 9001:2015 certified company and in process for IATF 16949:2016. What sets us apart is our complete in-house manufacturing process. From the initial processing of raw materials to the dispatch of finished goods, every step is carefully managed under our roof.

WHY US ?

- 30+ years of experience in the industry
- All fittings available in one-pc, two-pc and three-pc designs
- 100% Quality control with new parameters being added from time-to-time
- Testing and R&D facility in our manufacturing plant
- In-house cold-forging plant
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- In-house electroplating plant, with various options such as zinc and zinc/nickel

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Metal Hoses: Versatility and Applications Across Industries

Metal hoses also called flexible, corrugated, or stainless-steel hoses. They are standing there to cover rubber hoses every weakness. Designed to add strength, these types of hoses are undoubtedly one of the most critical, and vital elements in every industry. Mainly metal hoses are constructing from Stainless Steel for the least permeation and absorption.



They are suitable for a wide range of applications that require conveying corrosive fluids. Suitable for transferring extreme hot and cold media and work in harsh environmental conditions. The anti-collapse properties make them the best choice for submerged applications under vacuum pressure. Metal hose always proves durability and versatility in these types of applications. They offer a wide range of solutions for applications in different industries. In this article we will make you familiar with the metal hoses main areas of applications in different industries.

Chemical Industry:

Chemical industry is the biggest industrial consumer of corrugated flexible hose. But why are they the best choice for chemical industries? Application in the chemical industry requires temperature rating from extreme to cryogenics. Furthermore, applications

demand the mixing and conveyance of corrosive media. These requirements are best answered by the metal hose compared to the rubber alternatives. Followings are the main applications requiring corrugated hoses in chemical industries

Petrochemical:

Petrochemical industries mainly refine petroleum to produce chemical products such as plastic resins. This area of the industry has similar requirements as to chemical industries. They need hoses to work in conditions of high corrosion resistance. metal hose application in the petrochemical industry are as follows.

Applications:

- Chemical process lines;
 - Chlorine transfer;
 - Steam lines;
 - Process piping;
- and last but not least the Dry bulk material handling.

Cryogenics:

Cryogenics or the science of low temperature includes gas liquefaction and refrigeration. Cryogenic applications are demandable in a wide range of industries such as gas transfer for transferring liquid argon, liquid nitrogen, liquid oxygen, and liquid natural gas (LNG) transfer, what makes the metal hoses the best choice in the cryogenic application is their ability to withstand extremely cold temperatures.

Power Generations:

Metal hoses are designed to withstand extreme

conditions in power generation plants. Many critical factors in the power generation plants require robust metal hoses, which provide the applications with the advantages such as flexibility, wide temperature range, as well as diverse range of chemical corrosion resistance. Nuclear power plants also rely on the metal hoses for their applications. The most common applications in utilities in power generation that rely on metal braided hoses are as below:

Applications:

- Steam lines;
- Fuel conveyance lines;
- Piping;
- Coolant water lines;
- Finally, lubrication lines.

Marine:

A vast majority of marine applications highly demand components to withstand extreme conditions. They must faction properly in high-temperature conditions and deal with corrosive media. Moreover, the hose must exhibit anti-collapse properties in submerged applications. The metal hose is the key to all of these application requirements. They withstand high temperatures, and they are corrosion resistant. Also, due to their design, they won't collapse in full vacuum applications. Metal hose applications in marine industries are as follows.

- Fuel lines;
- Hydraulic lines;
- Material handling;
- Steam as well as water lines;
- Compressed gas transfer lines.

Danfoss Announces ₹500 Crore Investment in India for Localisation and Capacity Expansion

Danfoss, a renowned provider of energy-efficient solutions, is gearing up to inject ₹500 crore into India for localisation and capacity expansion initiatives. Originating from Denmark, Danfoss aims to bolster its investment-driven approach in India, capitalizing on the nation's promising growth prospects. Over the past decade, the company has already infused ₹2,000 crore into the Indian market. India emerged as a standout performer, showcasing a remarkable growth rate of approximately 20% in 2023. With sales surpassing ₹3,400 crore, Danfoss remains steadfast in its goal to achieve ₹5,000 crore in revenue from the Indian market by 2025.



Danfoss India, expressed confidence in India's trajectory, noting the country's consistent growth amidst challenges faced in other regions, particularly in the Asia Pacific market due to economic slowdown in China. India's resilience positions it to ascend to one of Danfoss's top five markets globally.

The proposed investment of ₹500 crore over the next 12-20 months will primarily focus on enhancing localisation efforts and expanding production capacity across Danfoss's six manufacturing facilities in India. This expansion initiative is expected to create job opportunities for over 500 individuals, augmenting the company's workforce from approximately 3,400 to 4,000 by the end of the current calendar year.

Ravichandran Purushothaman, President of

Tata Cummins Launches Hydrogen-Based Engine Facility in Jamshedpur

Tata Cummins Private Limited (TCPL) has inaugurated a cutting-edge factory in Jamshedpur, Jharkhand, dedicated to the production of hydrogen-based internal combustion engines for medium and heavy commercial vehicles. Spanning approximately seven acres, the facility's opening comes within a year of TCPL's signing of a Memorandum of Understanding (MoU) with the Jharkhand government. In addition to engines, the factory will also manufacture low to zero-emission technology products.



Girish Wagh, Executive Director of Tata Motors, emphasized the company's commitment to innovation and sustainability at the inauguration ceremony. He stated, *"The hydrogen-based powertrain aggregates and systems produced here will shape the future of mobility in India, making it smarter and greener. We remain committed to partnering with our customers to build a better tomorrow by enabling them to progressively adopt emission-free and commercially viable solutions for cargo and people mobility."*

Ashwath Ram, Managing Director of Cummins Group in India, echoed Wagh's sentiments, highlighting their dedication to manufacturing advanced low to zero-emissions technology products. Ram emphasized that this commitment is not just a promise but a responsibility embraced by the company, backed by concrete action and propelled by global expertise, strategic partnerships, and technological capabilities. He reiterated Cummins' steady progress on its Destination Zero strategy, aimed at advancing decarbonization efforts.

As a joint venture between Tata Motors Limited and Cummins Inc. USA, TCPL stands at the forefront of green energy solutions. Its subsidiary, TCPL Green Energy Solutions (TCPL GES), established in March 2023, focuses on designing and developing low and zero-emission propulsion technology solutions. These solutions aim to combat climate change and enhance air quality by reducing greenhouse gas emissions.

Adani Group Announces ₹60,000 Crore Investment in Airport Sector

The Adani Group has announced a significant investment of ₹60,000 crore over the next decade aimed at developing its airports into vibrant aviation hubs and commercial destinations for city residents.



A substantial portion of the investment, totalling ₹30,000 crore, will be allocated towards enhancing airport terminals and airside facilities across the group's airports in the next five years. This financial commitment is in addition to the ₹18,000 crore already invested in the initial phase of the Navi Mumbai airport project.

Presently, the conglomerate operates seven airports across India, with one under construction in Navi Mumbai. Combined, these airports boast an annual passenger handling capacity of 100-110 million. By 2040, the group aims to amplify this capacity by 2.5-3 times.

Arun Bansal, CEO of Adani Airport Holdings Limited, highlighted ongoing projects, stating, *"We are constructing a new terminal in Guwahati and have plans for a new terminal in Ahmedabad. The Navi Mumbai airport, slated to commence operations early next year, will have a capacity of 20 million passengers per year."*

Tata Motors Unveils ₹9,000 Crore Investment Blueprint for Manufacturing Expansion in Tamil Nadu

Tata Motors, the country's leading automobile manufacturer, has unveiled plans for a significant investment in manufacturing infrastructure in Tamil Nadu. Headquartered in Mumbai, the company has earmarked ₹9,000 crore for the establishment of a cutting-edge vehicle manufacturing facility in the state.



Expected to generate employment opportunities for over 5,000 individuals, the proposed project is slated to be located in the Ranipet district of Tamil Nadu. The company formalized its commitment through an agreement with the state government, solidifying its intent to bolster manufacturing capabilities in the region.

Commenting on the development, T R B Raaja, the State Industries Minister, highlighted Tamil Nadu's burgeoning status as a prime destination for investments. He emphasized the commitment of the Chief Minister towards fostering robust employment opportunities and enhancing the state's industrial landscape. The announcement underscores Tamil Nadu's position as a frontrunner in attracting major investments, further solidifying its reputation as a key player in the country's industrial growth trajectory.

FCP Index introduced Industrial Hydraulics course in ICFAI University

FCP Index & Connections Pvt Ltd. Leading technical consultancy organization based in Pune has signed a memorandum of Understanding with Engineering College, Agartala of ICFAI University and introduced Industrial Hydraulics course for their students of 7th Semester Mechanical Engineering. FCP Faculty team consisting of Mr. Ambarish Chatterjee, Mr. Krishna Kulkarni and Mr. Sunil Hazarnis will teach these students Basic Hydraulics, Advance Hydraulics and Fluid Conveyance Engineering in 3 weeks. This course will be integral part of academic curriculum.

The main objective of the course is to provide a holistic view of the usage of hydraulic systems in industrial components and application aimed at high-performance motion and control technology used in the industry. Students will acquire knowledge about comprehensive understanding of hydraulic components and systems which can be related to various applications used in different market segments such as construction and infrastructure sector. Steel Plants, Mining, Railways and OEM's. It will also help to increase employability in these fast-moving industry segments. A certificate will be provided after the successful completion of the training program.

COMMODITY INDEX

Months	Alloy Steel - Forging (20 MnCr5) Rs/Tonne	Alloy Steel - Forging (EN8) Rs/Tonne	Nickel US \$/Tonne	Zinc US \$/Tonne	Synthetic Rubber SBR	EPDM- Rs. Per Kg	Carbon Black- Rs. Per Kg
Mar-23	76000	75000	23307	2956	162	281	118
Apr-23	77000	76000	23756	2773	173	264	116
May-23	75500	74500	22229	2477	177	255	119
Jun-23	72800	71800	21193	2368	162	246	115
Jul-23	70500	69500	20862	2389	140	234	106
Aug-23	69000	68000	20548	2410	141	229	118
Sep-23	69400	68400	19629	2488	146	228	123
Oct-23	71000	70000	18275.7	2450	160.11	232.5	116.19
Nov-23	69250	68250	16894	2541	165.92	233.27	115.5
Dec-23	70600	69600	16388.7	2501.7	159.07	228.83	115.73
Jan-24	71000	70000	16091.4	2521.5	157.92	223.04	116.32
Feb-24	70750	69750	16307.6	2364.5	160.64	223.32	116.1

BACKHOE LOADERS SALES IN INDIA- 2024

Month	JCB	Excorts	Mahindra	Case	Tata Hitachi	Bull Machines	Bobcat	CAT	Manitou	ACE	Total 2024	Total 2023
Jan	4576	16	81	137	92	59	35	69	35	48	5148	4705
Feb	3610	57	86	133	117	31	54	108	39	35	4270	3938

EXCAVATORS SALES IN INDIA- 2024

Month	Tata Hitachi	JCB	Hyundai	Sany	Kobelco	CAT	Komatsu	Yohbo	Liugong	XCMG	CNH	Total 2024	Total 2023
Jan	614	561	680	510	166	123	140	82	32	207	8	3123	2658
Feb	661	557	531	405	169	130	169	76	36	229	6	2969	2505

COMPACTORS SALES IN INDIA -2024

Month	Case	HAMM	Dynapac	JCB	L & T	Excorts	Volvo	AMMAN	Others	Total 2024	Total 2023
Jan	101	98	36	61	47	15	25	10	17	410	450
Feb	127	122	55	64	44	32	25	12	9	490	366

TRACTORS SALES IN INDIA- 2024

Month	Mahindra Group	TAFE Group	Sonalika	Escorts Ltd	John Deere	New Holland	Kubota	Captain	VST	Others	2024	2023
Jan	36930	11003	11515	8185	5739	3501	1732	921	483	2436	82445	65635
Feb	31590	8307	9841	7449	5906	3016	1735	498	341	2577	71260	69034

Source : Industry Inputs

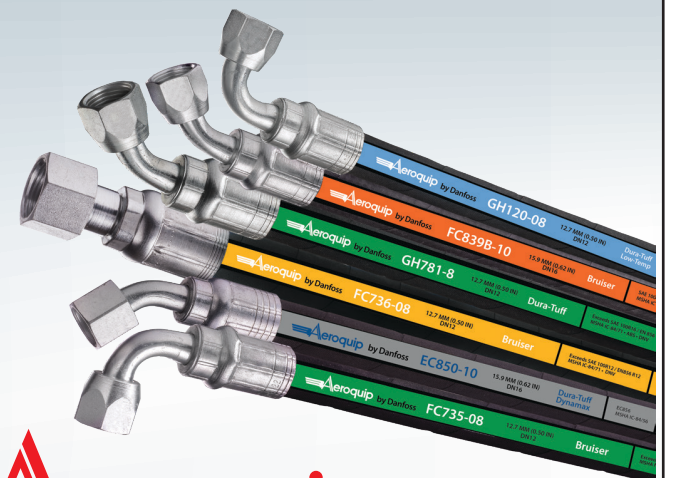
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ENGINEERING TOMORROW

