



# FCP TIMES

A MONTHLY NEWS LETTER FOR FLUID  
CONVEYANCE PRODUCTS INDUSTRY



## Marine & Shipbuilding Industry – An Overview

The shipbuilding industry in India is a strategically important sector that contributes to the country's maritime, defence, and economic capabilities. The Indian shipbuilding industry serves three primary market segments:

**Commercial Shipbuilding:** This includes the construction of bulk carriers, tankers, container ships, and other types of vessels used in global trade. The industry focuses mainly on small to medium-sized vessels.

**Défense Shipbuilding:** India's strategic needs drive its defence shipbuilding sector, which includes the construction of aircraft carriers, submarines, frigates, and patrol vessels for the Indian Navy and Coast Guard.

**Offshore and Specialized Vessels:** These include offshore supply vessels, platforms, tugs, dredgers, and other specialized ships for oil and gas exploration, port operations, and inland water transport.

### Key Drivers of Growth

Several factors contribute to the growth of the shipbuilding industry in India:

**Government Support:** Policies like the "Make in India" initiative aim to enhance self-reliance in defence manufacturing, including shipbuilding. Financial incentives, tax exemptions, and subsidies are provided to promote the sector.

**Expansion of Ports and Maritime Infrastructure:** India's focus on developing its maritime infrastructure, including Sagarmala, a program aimed at port-led development, supports the growth of the shipbuilding industry.

**Growing Naval Requirements:** With increasing geopolitical challenges and the desire to strengthen its maritime defence capabilities, the Indian Navy continues to place significant orders for warships, submarines, and patrol vessels.

**Rising Global Demand:** As global trade recovers and environmental regulations favour new, more efficient ships, demand for new vessels is expected to increase.



**Major Shipbuilding Companies in India:**  
**Mazagon Dock Shipbuilders Limited (MDL)** Formerly known as Mazagon Dock Limited, is a shipyard situated in Mazagaon, Mumbai. It manufactures warships and submarines for the Indian Navy and offshore platforms and associated support vessels for offshore oil drilling. It also builds tankers, cargo bulk carriers, passenger ships and ferries.

**Cochin Shipyard Ltd (CSL)** is the largest shipbuilding and maintenance facility in India. It is part of a line of maritime-related facilities in the port-city of Kochi, in the state of Kerala, India. The services provided by the shipyard are building platform supply vessels and double-hulled oil tankers. It built the first indigenous aircraft carrier for the Indian Navy, the INS Vikrant.

**Goa Shipyard Limited (GSL)** is an Indian Government owned ship building company located on the West Coast of India at Vasco da Gama, Goa. It was established in 1957. GSL is undergoing a modernisation of its yard to adapt to the latest technology in shipbuilding. To this purpose it is negotiating with well-known shipbuilders for an arrangement to collaborate. To date it has built 167 vessels, including barges, tugs, landing craft, offshore patrol vessels and other vessels for the Indian Navy and Coast Guard.

**Naval Dockyard, Mumbai** Previously Bombay Dockyard, is an Indian shipbuilding yard at Mumbai.

**Garden Reach Shipbuilders & Engineers Ltd,** abbreviated as GRSE, is one of India's leading shipyards, located in Kolkata. It builds and repairs commercial and naval vessels.[5] GRSE also exports the ships that the company builds. Founded in 1884 as a small privately-owned company on the eastern bank of the Hooghly River, it was renamed as Garden Reach Workshop in 1916. GRSE was nationalised by the Government of India in 1960.

**Hindustan Shipyard Limited (HSL)** is a shipyard located in Visakhapatnam on the east coast of India. Founded as the Scindia Shipyard, it was built by industrialist Walchand Hirachand as a part of The Scindia Steam Navigation Company Ltd. The first ship to be constructed fully in India after independence was built at the Scindia Shipyard and named Jal Usha.

**Reliance Naval and Engineering Limited (R-Naval),** formerly known as Reliance Defence & Engineering is an Indian shipbuilding and heavy industry company headquartered in Mumbai. The shipyard is located in Pipavav, Gujarat, at a distance of 140 km South West of Bhavnagar. R-Naval is

the first private sector company in India to obtain a license and contract to build warships. Pipavav is the largest shipyard in India.

**L & T Shipbuilding:** L&T Operates a Greenfield Defence shipyard on the east coast at Kattupalli, near the metropolitan city of Chennai, the capital state of Tamil Nadu. L&T undertakes building of Warships, Submarines, Auxiliary Vessels/ Crafts and Specialized Commercial Ships. In addition, repairs and refits of both Defence and Commercial ships are also undertaken.

### Hoses in Marine Applications: Essential Components for Reliable Operations

Marine environments present unique challenges that demand specialized equipment and materials to ensure safety, reliability, and longevity. Among the critical components in these systems are hoses, which play a vital role in various marine applications, from fuel transfer to bilge pumping. This article explores the types of hoses used in marine environments, their applications, and the key considerations for selecting the right hose for a specific purpose.



### Types of Marine Hoses

- Condensate Lines
- Compressed Air
- Fresh Water
- Sea Water
- Lubricant Lines
- Hydraulic Lines
- Inert Gas Lines
- Steam Lines
- Fuel Oil Burner Connections
- Ventilation Lines for Natural Gas Feed Pipes of Engines
- Fuel Oil Piping Systems
- Sanitary Lines
- External Shielding for Fuel Injection Pipes
- Workboat and Barge Repair
- Conduit
- Bellows & Expansion Joints

# Precautions during storage of O-Rings

O-rings are used in hydraulic hose fittings to prevent leaks and maintain the integrity of hydraulic systems. O-rings are small, flexible elastomeric rings that are compressed into a groove when the fitting is assembled. This creates a leak-proof barrier that can withstand high pressures and temperature changes



O-rings are the unsung heroes in hydraulic systems. It is used in many industries. The price is favourable and easy to replace and maintain. However, if they are not properly selected or maintained, O-rings can cause serious damage. In the role of sealing machinery, O-ring is a very small but very critical element.

The shelf life of O-rings or other elastic seals not only begins on the date of manufacture, but also depends on the correct packaging and storage under specific conditions, even in the body of the fittings. The shelf life of rubber is greatly affected by storage conditions. A common misunderstanding is that if metal accessories are not stored in a corrosive environment, they will permanently exist in the box. Although this is true, to a certain extent, if the unused fittings have O-rings, the storage life of the O-rings needs to be considered.

For storing joints with O-rings, please pay attention to 6 points to reduce the wear of O-rings before using hydraulic adapters. Try to prevent direct sunlight or place it near a high-temperature heat source such as a boiler to prevent the O-ring from aging in advance. O-rings are affected by various external environmental factors (such as: distortion, oxygen, ozone, light, heat source, humidity, oil, or chemical solvents, etc.), O-rings may be modified due to their physical and chemical properties and fail.

**1. Temperature:** 5-25°C is the ideal storage temperature.

Avoid touching heat sources and sunlight. Seals taken out from low-temperature storage conditions should be placed in an environment of 20°C before use.

**2. Humidity:** The suitable air humidity is above 70% to prevent excessive humidity or excessive drying.

**3. Light:** Prevent sunlight and strong artificial light sources containing ultraviolet rays.

**4. Radiation:** to prevent damage to the seal by ionizing radiation.

**5. Oxygen and ozone:** Rubber materials should be prevented from being exposed to circulating air. Can be packaged, wrapped, stored in airtight containers.

**6. Deformation:** Rubber parts should be placed as freely as possible and not allowed to be compressed, so as not to cause compression and permanent deformation.

By having these precautions one can get better life of O-Rings and also the leakage free application.

## Emerging Importance of Hydraulic Hoses as per ISO 18752 standards

The industry preference is moving from using SAE/DIN/EN specifications in hydraulic hoses toward using more user-friendly ISO 18752 standards.

The newer ISO 18752 standard for hydraulic hoses solves many of the issues concerning pressure classes, hose sizes, and product uniformity in different regions. Introduced in 2006, ISO 18752 centres around 10 maximum working pressure classes, ranging from 500 psi to 8,000 psi. With the introduction of this standard, ISO is helping large global OEMs and their customers to apply the same specifications to their systems, no matter where in the world they are made or sold. That means manufacturers can be assured of receiving the same hydraulic hoses, tested to the same specifications, to meet the needs of their applications globally.

Under ISO 18752, hoses are identified by pressure class, and each pressure class accommodates an entire range of hose diameters. This is in contrast to traditional SAE standards, which provide general, dimensional, and performance specifications for the most common hoses used in hydraulic systems based on hose construction. By specifying hose based upon

pressure and performance, the ISO 18752 standard streamlines the selection process, making it easier for equipment designers to find hoses for their applications.

In addition to requiring constant working pressure performance ratings in each pressure class for different hose sizes, the ISO 18752 standard introduces four different classes of service, A through D, which correlate with each class's resistance to impulse pressure. In order to be rated to the ISO 18752 standard, hydraulic hoses undergo rigorous testing for durability and performance to ensure products possess the high quality necessary to meet the demands of tough applications. For each grade of hose, every ISO 18752 hose for a single pressure class must test to high impulses, extended cycles, and higher pressure and temperature criteria to be rated to the new global standard. Additionally, each grade is classified further by its outside diameter (O.D.) as either standard (AS, BS, CS) or compact (AC, BC, CC, DC). Compact hose types have a smaller O.D. and tighter bend radius than the standard types.

Another benefit of hoses made to the ISO 18752 standard is establishing uniformity between locations.

Written by the global standards organization, ISO engineers around the world can use this standard in place of their regional standard to designate hoses by size and pressure class for their application. Specifying constant working pressure hoses using the ISO 18752 standard provides opportunities for OEMs and end users to improve efficiency in operations, increase uptime with a streamlined selection process and longer service life, and provide dependable performance and quality across the globe.

ISO 18752 PERFORMANCE DEFINITIONS				
Grade	Type*	Resistance to Impulse		
		Temperature	Impulse Pressure (% of MWP†)	Minimum Number of Cycles
A	AS	100° C (212° F)	133%	200,000
	AC			
B	BS	100° C (212° F)	133%	500,000
	BC			
C	CS	120° C (250° F)	133% and 120%†	500,000
	CC			
D	DC	120° C (250° F)	133%	1,000,000

\* Standard or compact, e.g. CS is grade C, standard type. Standard types have larger outside diameters and a larger bend radii, whereas compact types have smaller outside diameters and smaller bend radii.  
 † Maximum working pressure  
 †† 120% of the MWP shall be used for classes 350, 420, and 560 instead of 133%  
 ISO 18752 classifies hoses according to their resistance to impulse into four grades: A, B, C, and D. Each grade is classified by outside diameter into standard types (AS, BS, and CS) and compact types (AC, BC, CC, and DC)

## Winner™ by Danfoss hydraulic hoses and fittings

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Contact Danfoss regional sales teams at: [FC-AP-SDM@danfoss.com](mailto:FC-AP-SDM@danfoss.com)



Aeroquip® and Winner™ by Danfoss  
Core hydraulic hose products catalog



Winner™ by Danfoss  
Hose and fittings product catalog



Winner™ by Danfoss  
EC640 spiral hose fact sheet



Winner™ by Danfoss  
EC110 one and EC210 two wire braided hydraulic hose sales sheet



Winner by Danfoss

ENGINEERING TOMORROW



## Wipro Hydraulics opens Rs 250 cr. manufacturing facility in Jaipur

Wipro Hydraulics on Thursday inaugurated its sixth manufacturing facility in Jaipur, Rajasthan, built with an investment of about Rs 250 crore. The plant was inaugurated by Rajasthan Chief Minister Mr. Bhajan Lal Sharma, Wipro Enterprises Chairman Mr. Azim Premji and Mr. Pratik Kumar, CEO, Wipro Infrastructure Engineering. *“The company has invested approximately Rs 250 crore to set up this facility, which is projected to generate about 400 jobs. We currently have a manufacturing capacity of 1,000 hydraulic cylinders per day, and we are fully capable of doubling it if and when the demand rises,”* informs Mr. Kumar.



This is Wipro's sixth facility in India, after two units in Chennai and Hindupur each and one unit in Bengaluru, he said, adding it will cater to domestic and international demand. This vertical is the hydraulic cylinders and components manufacturing business of Wipro Infrastructure Engineering.

## “VST Tillers & Tractors to Establish ₹100 Crore Global Tech Centre in Hosur”

VST Tillers & Tractors, a leading manufacturer of farm equipment and tractors, is set to bolster its research and development capabilities by establishing a global tech centre in Hosur, Tamil Nadu. This centre aims to accelerate innovation in electric vehicles (EVs), develop proprietary technologies, enhance testing capabilities, and foster international collaborations. It will serve as the company's primary R&D hub, focusing on electric powertrains, battery technologies, and advanced driver assistance systems, enabling the creation, testing, and validation of cutting-edge, reliable,

and safe electric vehicles.

The company plans to invest ₹100 crore in establishing the global R&D centre in a phased manner. This investment follows the ₹100 crore VST has already poured into R&D over the past three to four years, as mentioned by Arun V Surendra, Chairman of VST Tillers & Tractors, in the company's latest annual report. These ongoing R&D investments will propel the company forward, enabling the introduction of advanced solutions tailored to the evolving needs of farmers.

## FCP Index organized Technical Workshop in Pune

The one-week-long technical workshop on hoses, fittings, and hose assemblies, organized by FCP Index in Pune, concluded on Aug 31st 2024. A diverse group of 8 participants from 5 different companies attended this highly interactive workshop. Led by experienced trainers Mr. Ambarish Chatterjee and Mr. Anoop Pillai, the workshop delved into a variety of topics including hose standards, fittings standards, hose selection, future hose standards, and other relevant subjects. The workshop structure allocated 2 days specifically for practical training, focusing on the crucial “9 C” concept for making hose assemblies, identification of fittings threads, and familiarization with various gauges and instruments. Participants also received hands-on experience with crimping machines and skiving machines, gaining practical skills essential for their professional roles.



## Yanmar Acquires CLAAS India

O saka, Japan based Yanmar Holdings Co., Ltd. announced the acquisition of all shares of CLAAS India, a manufacturer of agricultural machinery in India, through its group company Yanmar Coromandel Agrisolutions. The acquisition, expected to be completed by September 30, 2024, aims to accelerate the expansion of Yanmar's Agribusiness in India by bringing into its fold a company with a world class facility and a proven track record in production of high quality and durable combine harvesters.


*“India is one of the world's top grain producers and represents a crucial market for our agribusiness,”* said Kemal Shoshi, President of Yanmar Agribusiness Co., Ltd. *“This acquisition will enable us to offer a wider range of products, significantly enhancing Yanmar's presence in India. We look forward to leveraging both companies' strengths to deliver Yanmar's products to more customers.”*

Class India has its manufacturing facility in Morinda near Chandigarh and making Harvesters and numerous agri machines.

## Anti-Dumping Duty on Alloy Steel Chisels & Rock Breakers from China & Korea

The Central Board of Indirect Taxes and Customs (CBIC) has issued Notification No. 11/2024-Customs (ADD) on June 27, 2024, imposing definitive anti-dumping duty on alloy steel chisels/tools and hydraulic rock breakers in fully assembled condition originating from China PR and Korea RP. This action follows the findings of the designated authority, which concluded that these products were being exported to India at prices lower than their normal value, causing material injury to the domestic industry.

For hydraulic rock breakers originating from China PR, duties range from 26.95% to 162.50%, with Yantai Eddie Precision Machinery Co., Ltd facing the highest duty of 131.11%. Similarly, alloy steel chisels from China PR face duties ranging from 4.55% to 29.21%. The duties are applicable for a five-year period unless amended earlier, and are calculated based on CIF value at the time of import. The notification aims to address the dumping issue and safeguard the interests of the domestic industry involved in construction, mining, and related sectors utilizing these tools.




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**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
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
Mar-24	70400	69400	17432.8	2462.4	164.19	224.38	115.15
Apr-24	70000	69000	18172	2730.4	173.34	224.13	111.98
May-24	70800	69800	19520	2955.7	178.51	225.14	112.15
Jun-24	70500	69500	17508	2813	176.2	218	113.2
Jul-24	70000	69000	16396	2785.2	183	219	112.92

**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
Mar	4030	77	114	196	171	24	60	167	42	35	4916	4100
Apr	2648	26	75	143	60	24	63	82	24	25	3170	3220
May	2246	28	71	141	76	20	72	106	63	21	2844	2742
June	2426	17	73	146	67	49	39	129	28	31	3005	3137
July	2075	21	34	86	58	52	29	55	19	22	2451	2923

**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
Mar	213	153	65	73	64	44	42	15	30	699	505
Apr	103	113	52	69	49	21	24	7	12	450	352
May	94	73	21	45	33	15	23	8	12	324	151
June	56	44	18	46	26	18	13	4	8	233	147
July	42	48	8	35	26	7	10	3	8	187	291

**EXCAVATORS SALES IN INDIA- 2024**

Month	Tata Hitachi	JCB	Hyundai	Sany	Kobelco	CAT	Komatsu	Volvo	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
Mar	819	580	537	514	232	156	186	97	142	209	6	3478	3159
Apr	412	488	450	357	95	102	175	86	60	203	6	2434	2362
May	478	425	388	275	109	96	144	73	17	216	5	2226	2107
June	424	394	333	299	105	95	136	91	97	204	5	2183	1801
July	398	357	277	312	103	46	103	73	99	224	0	1992	1647

**TRACTORS SALES IN INDIA- 2024**

Month	Mahindra Group	TAFE Group	Sonalika	Excorts Lid	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
Mar	24274	10878	8682	8054	5523	3062	1301	482	475	1022	63753	82450
Apr	35805	13005	9649	7168	5779	2867	1324	200	208	940	76945	79481
May	29019	8515	9225	7655	5149	2898	1157	215	220	2044	66097	82920
June	29616	8646	9244	7536	5520	2863	1218	195	205	1361	71029	98434
July	34687	13304	11141	8274	6251	3018	1461	190	185	1459	79970	90821

Source : Industry Inputs

**AUTOMOBILE SALES IN INDIA- 2024**

Month	2- Wheelers	3- Wheelers	Personal Vehicles	Commercial Vehicles	2024	2023
Jan	1458849	97675	393250	89208	2038982	1753513
Feb	1439523	94918	330107	88367	1952915	1706436
Mar	1529875	105222	322345	91289	2048731	1960780
Apr	1643510	80105	335123	90707	2149445	1669100
May	1534856	98265	303358	83059	2019538	1944675
June	1375889	94321	281566	71029	1822805	1765208
July	1443463	110497	320129	80057	1954146	1786899

**MARKET LEADERS**

**JCB (Backhoe Loaders)**     **Case (Compactors)**     **Tata Hitachi (Excavators)**     **Mahindra (Tractors)**  
**Hero (2 Wheelers)**     **Bajaj (3 Wheelers)**     **Maruti (PV)**     **Tata Motors (CV)**