



REFERENCE LIST (Navy)

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SHIPYARD	SHIP OWNER	VESSEL TYPE	HULL NUMBER	YEAR
ARSENAL DE MARINHA DO RIO	BRAZILIAN NAVY	CORVETTE	CV 02 - BARROSO	2003
BOUSTEAD NAVAL SHIPYARD	ROYAL MALAYSIAN NAVY	LCS (LITTORAL COMBAT SHIP)	LCS 1-2-3-4-5-6	2015
CANT. NAV. DE POLI	ITALIAN NAVY	TANKER	131-132-133-134-135-136-137	1988
CANT. NAV. DE POLI	ITALIAN NAVY	TANKER	149-150	1992
CANT. NAV. FERRARI	ITALIAN NAVY	TANKER	70	1988
CANT. NAV. FERRARI	ITALIAN NAVY	FLOATING DOCK	75	1989
CANT. NAV. FERRARI	ITALIAN NAVY	FLOATING DOCK	105	1990
CANT. NAV. GIACALONE	ITALIAN NAVY	OCEAN GOING TUG	65-66-67	1991
CANT. NAV. GIACALONE	ITALIAN NAVY	OCEAN GOING TUG	82-83-84-85-86-87-88	1992
CANT. NAV. GIACALONE	ITALIAN NAVY	FLOATING DOCK	89-90-91	1996
CANT. NAV. MEGARIDE	ITALIAN COAST GUARD	SUPPLY VESSEL	C0951	2011
CANT. NAV. MORINI	ITALIAN NAVY	PATROL VESSEL	218-219-220-221-222-223	1985
CANT. NAV. RIUNITI	PERUVIAN NAVY	FRIGATE		1977
CANT. NAV. RIUNITI	LIBYAN NAVY	CORVETTE	1161-1162-1163-1164	1980
CANT. NAV. RIUNITI	ITALIAN NAVY	FRIGATE	300-301-302-303	1980
CANT. NAV. RIUNITI	VENEZUELAN NAVY	FRIGATE	304-305-306-307	1980
CANT. NAV. RIUNITI	VENEZUELAN NAVY	FRIGATE	851-852-853-854-855-856	1981
CANT. NAV. RIUNITI	ECUADORIAN NAVY	FRIGATE	888-889-890-891-892-893	1981
CANT. NAV. RIUNITI	ROYAL MALAYSIAN NAVY	CORVETTE	907-908-909-910	1981
CANT. NAV. RIUNITI	ITALIAN NAVY	FRIGATE	911-912	1981
CANT. NAV. RIUNITI	ITALIAN NAVY	FRIGATE	875-876-877-878-879-880	1982
CANT. NAV. RIUNITI	ITALIAN NAVY	FRIGATE	923-924-925-926	1982
CANT. NAV. RIUNITI	ITALIAN NAVY	CORVETTE	115	2000
CANT. NAV. RODRIQUEZ	ITALIAN NAVY	PATROL BOAT	11 UNITS	2003
CHANTIERS DE L'ATLANTIQUE	FRENCH NAVY	HELICOPTER CARRIER	I 32 (MISTRAL) - J 32 (TONNERE)	2002
CHANTIERS DE L'ATLANTIQUE	FRENCH NAVY	LANDING HELICOPTER DOCK	G 33 (DIXMUDE)	2009
CHANTIERS DE L'ATLANTIQUE	RUSSIAN NAVY	LANDING HELICOPTER DOCK	M 33 - N 33	2011
CHANTIERS DE L'ATLANTIQUE	OCCAR - FRENCH NAVY	LOGISTIC SUPPORT SHIP	C35-D35-E35-F35	2020

SHIPYARD	SHIP OWNER	VESSEL TYPE	HULL NUMBER	YEAR
C.R.N. ANCONA	ITALIAN NAVY	PATROL BOAT	101-102-103-104	1989
C.R.N. ANCONA	ITALIAN NAVY	PATROL BOAT	110	1997
DAMEN SHIPYARD	ROYAL THAI NAVY	HYDROGRAPHIC VESSEL	HYDRO THAI	2006
DAMEN SCHELDE NAVAL SHIP.	ROYAL NETHERLANDS NAVY	JOINT SUPPORT SHIP	412	2010
DAMEN SCHELDE NAVAL SHIP.	INDONESIAN NAVY	FRIGATE	414	2013
DAMEN SCHELDE NAVAL SHIP.	INDONESIAN NAVY	FRIGATE	415	2014
DAMEN SCHELDE NAVAL SHIP.	MEXICAN NAVY	CORVETTE	419	2017
DAMEN SCHELDE NAVAL SHIP.	NIGERIAN NAVY	CORVETTE	420	2019
DAMEN SCHELDE NAVAL SHIP.	ROYAL NETHERLANDS NAVY	HOV	391-392	2002
DAMEN SCHELDE NAVAL SHIP.	SOUTH AFRICAN NAVY	OFFSHORE PATROL VESSEL	Z 0059	2003
DAMEN SCHELDE NAVAL SHIP.	INDONESIAN NAVY	CORVETTE	00397-00398	2004
DAMEN SCHELDE NAVAL SHIP.	INDONESIAN NAVY	CORVETTE	00399-00400	2006
DAMEN SCHELDE NAVAL SHIP.	ROYAL MOROCCAN NAVY	FRIGATE	405-406-407	2008
DAMEN SCHELDE NAVAL SHIP.	ROYAL NETHERLANDS NAVY	COMBAT SUPPORT SHIP	421	2021
DCNS	FRENCH NAVY	HELICOPTER CARRIER	I 32 (MISTRAL) - J 32 (TONNERE)	2003
DCNS	FRENCH NAVY	FRIGATE	HORIZON (2 UNITS)	2003
DCNS	FRENCH NAVY	OPV CORVETTE	L'ADROIT	2010
E.N. BAZAN	SPANISH NAVY	MINEHUNTER	209-210-211-212	1995
ELEFSIS SHIPYARD	HELLENIC NAVY	TANKER	10061	2001
FINCANTIERI	ITALIAN NAVY	RESCUE VESSEL M. PURPOSE	929	1987
FINCANTIERI	ITALIAN NAVY	CORVETTE	5850-5851-5852-5853	1987
FINCANTIERI	ITALIAN NAVY	RESCUE VESSEL M. PURPOSE	5825	1988
FINCANTIERI	ITALIAN NAVY	PATROL BOAT	5846-5847-5848-5849	1990
FINCANTIERI	ITALIAN NAVY	DESTROYER	5844-5845	1990
FINCANTIERI	ITALIAN NAVY	SUBMARINE	5878-5879	1991
FINCANTIERI	ITALIAN NAVY	RESCUE VESSEL M.PURPOSE	5932	1992
FINCANTIERI	REPUBLIC OF CHINA NAVY	OCEANOGRAPHIC	5942	1993
FINCANTIERI	ITALIAN NAVY	TANKER	5957	1995

SHIPYARD	SHIP OWNER	VESSEL TYPE	HULL NUMBER	YEAR
FINCANTIERI	ITALIAN COAST GUARD	PATROL BOAT	5996	1996
FINCANTIERI	ITALIAN NAVY	PATROL BOAT	6061-6062-6063-6064	1999
FINCANTIERI	ITALIAN NAVY	OCEANOGRAPHIC	6080	2000
FINCANTIERI	ITALIAN NAVY	PATROL BOAT	6088-6089	2000
FINCANTIERI	ITALIAN NAVY	PATROL BOAT	6083-6084-6085-6105-6107	2000
FINCANTIERI	ITALIAN NAVY	AIRCRAFT CARRIER	6090 - CAVOUR	2002
FINCANTIERI	ITALIAN NAVY	FRIGATE	6108-6109 - HORIZON	2003
FINCANTIERI	N.I.O.T.	OCEAN RESEARCH VESSEL	6147	2006
FINCANTIERI	ITALIAN NAVY	FRIGATE	6145-6146 - FREMM	2007
FINCANTIERI	IRAQI NAVY	PATROL BOAT	6156-6157-6158-6159 - SAETTIA	2007
FINCANTIERI	TURKISH COAST GUARD	SEARCH & RESCUE VESSEL	6182-6183-6184-6185	2009
FINCANTIERI	ITALIAN NAVY	FRIGATE	6209-6210-6211-6212 - FREMM	2009
FINCANTIERI	U.A.E. NAVY	CORVETTE	6220	2009
FINCANTIERI	U.A.E. NAVY	PATROL VESSEL	6221-6222	2010
FINCANTIERI	ITALIAN COAST GUARD	OPV	6233-6234	2011
FINCANTIERI	ALGERIAN NAVY	PURPOSE RESCUE VESSEL	6235	2011
FINCANTIERI	ITALIAN NAVY	FRIGATE	6247-6248 - FREMM	2014
FINCANTIERI	ITALIAN NAVY	LOGISTIC SUPPORT SHIP	6259 - LSS	2015
FINCANTIERI	ITALIAN NAVY	FRIGATE	6276 - FREMM	2015
FINCANTIERI	ITALIAN NAVY	FRIGATE	6277 - FREMM	2016
FINCANTIERI	ITALIAN NAVY	PATROL VESSEL	6261 - PPA	2016
FINCANTIERI	ITALIAN NAVY	PATROL VESSEL	6262-6263-6264-6265-6266-6267 - PPA	2017
FINCANTIERI	ITALIAN NAVY	LANDING HELICOPTER DOCK	6260 - LHD	2017
FINCANTIERI	QATARI NAVY	MULTIROLE CORVETTE	6291-6292-6293-6294	2018
F.LLI SIGNALI	ITALIAN NAVY	TANKER	39-41	1986
HYUNDAI HEAVY INDUSTRIES	VENEZUELAN NAVY	LOGISTIC SUPPORT SHIP	P093	1999
INTERMARINE	ITALIAN NAVY	MINEHUNTER	4 UNITS	1983
INTERMARINE	ROYAL MALAYSIAN NAVY	MINEHUNTER	4 UNITS	1983
INTERMARINE	NIGERIAN NAVY	MINEHUNTER	2 UNITS	1985

SHIPYARD	SHIP OWNER	VESSEL TYPE	HULL NUMBER	YEAR
INTERMARINE	ITALIAN NAVY	MINEHUNTER	8 UNITS	1989
INTERMARINE	ROYAL THAI NAVY	MINEHUNTER	2 UNITS	1997
INTERMARINE	ITALIAN NAVY	RESEARCH VESSEL	2 UNITS	1999
INTERMARINE	FINNISH NAVY	MINEHUNTER	MCMV 2010	2007
INTERMARINE	ALGERIAN NAVY	MINEHUNTER	CDMA	2014
INTERMARINE	REPUBLIC OF CHINA NAVY	MINEHUNTER	PROJECT 242	2016
INTERMARINE	ALGERIAN NAVY	MINEHUNTER	CDMA 252	2017
INTERMARINE	ALGERIAN NAVY	MINEHUNTER	256	2019
ITALCANTIERI	ITALIAN NAVY	AIRCRAFT CARRIER	4367 - GARIBALDI	1982
IZAR S.A.	SPANISH NAVY	MINEHUNTER	224-225	2002
KHULNA SHIPYARD	BANGLADESH NAVY	LANDING CRAFT UTILITY		2018
NAVANTIA	SPANISH NAVY	SUBMARINE	S 81-S 82-S 83-S 84	2006
PT PAL	INDONESIAN NAVY	FRIGATE	362	2017
PT PAL	INDONESIAN NAVY	LANDING CRAFT UTILITY	JW1 W000298 - JW2 W000299	2017
PT PAL	INDONESIAN NAVY	KCR 60 FPB	W000300-W000301	2019
PT PAL	INDONESIAN NAVY	KBRS 124M HOSPITAL SHIP	W000302	2019
PT PAL	INDONESIAN NAVY	KBRS 124M HOSPITAL SHIP	W000303	2020
REMONTOWA SHIPBUILDING S.A.	POLISH NAVY	MINEHUNTER	N. 258 / 0620-1 (KORMORAN II)	2013
REMONTOWA SHIPBUILDING S.A.	POLISH NAVY	TUG	B860/1,2,3,4,5,6	2017
SOCARENAM	BELGIUM NAVY	PATROL VESSEL	248-249	2014
ST MARINE	ROYAL NAVY OF OMAN	OFFSHORE PATROL VESSEL	BO660-661-662-663	2012
ST MARINE	SINGAPORE NAVY	LITTORAL MISSION VESSEL	BO668-669-670-671-672-673-674-675	2014
UMOE MANDAL SHIPYARD	ROYAL NORWEGIAN NAVY	MINEHUNTER	M350-351-352-353-354-355-356	2006

PRODUCTION RANGE FOR MARINE AND NAVY

CENTRIFUGAL PUMPS

Centrifugal pumps according to EN 733 standards
 Horizontal end suction pumps
 Vertical in line pumps
 Vertical in line double suction pumps
 Recessed impeller torque flow pumps
 Vertically suspended line-shaft centrifugal pumps
 Chemical pumps according to ISO 2858 - 5199
 Diathermic oil circulation pumps

Multistage high pressure pumps
 Side channel pumps
 Fire fighting Naval pumps (according to UMM1008 standards)
 Portable diesel engine fire pumps

POSITIVE DISPLACEMENT PUMPS

Hollow oscillating disk pumps
 Gear pumps
 Piston pumps

MARINE AND NAVAL APPLICATIONS

HULL SERVICES

Main Cooling
 Ballast & Bilge Services
 Deck Water Sealing
 Sludge
 Auxiliaries Cooling
 Sewage Transfer

ENGINE SERVICES

Main Engine Lube Oil System
 Lube Oil/ Fuel Oil Transfer Applications
 Waste Oil Transfer
 Boiler Feed
 Economiser Circulation

GENERAL SERVICES

Fire Fighting & General Services
 Fresh Water System
 HT/LT Circulation
 Grey/Black Water Handling
 AC Chilled Water Circulation
 Water Chilling
 Scrubber system
 Ballast water treatment

QUALITY SYSTEM

Quality System according to ISO 9001:2008, ISO 14001:2004 and NATO AQAP 2110

Pumps designed following NATO Military Standards (shock proof, noise proof, vibrations proof, non magnetic executions)

CLASSIFICATION SOCIETIES

Registro Italiano Navale, American Bureau of Shipping, Lloyd's Register, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Nippon Kaiji Kyokay, Russina Maritime Register of Shipping

ITALIAN MILITARY STANDARDS

CODE	DESCRIPTION	EDITION
NAV-30-A001	SHOCK TEST PROCEDURE FOR SHIPBOARD EQUIPMENT	JAN 86
NAV-30-A002	MECHANICAL VIBRATIONS OF SHIPBOARD EQUIPMENT	JAN 72
NAV-05-A-163	FLEXIBLE COUPLING CERSTIFICATE	1991
NAV-80-9999-0015-14-00B000	EQUIPMENT AND SYSTEM ARRANGEMENT	JUL 92
NT 60612	STRUCTURBORNE VIBRATORY ACCELERATION MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	JUN 90
MM-60612	STRUCTURBORNE VIBRATORY ACCELERATION MEASUREMENTS AND ACCEPTANCE CRITERIA OF ROTATING COMPONENTS	
UMM 1008	GENERAL TECHNICAL CHARACTERISTICS FOR FIRE FIGHTING PUMPS	

INTERNATIONAL MILITARY STANDARDS

CODE	DESCRIPTION	EDITION
MIL-STD-129L	MILITARY STANDARD MARKING FOR SHIPMENT AND STORAGE	15/10/1990
MIL-STD-167-1	MILITARY STANDARD – MECHANICAL VIBRATIONS OF SHIPBORAD EQUIPMENT (TYPE I - ENVIRONMENTAL AND TYPE II - EXCITED)	01/05/1974
MIL STD-461D	MILITARY STANDARD – REQUIREMENTS FOR THE CONTROL OF ELETTRROMAGNETIC INTERFERENCE EMISSIONS AND SUSCEPTIBILITY	11/01/1993
MIL-STD-740B	MILITARY STANDARD – AIRBORNE AND STRUCTUREBORNE NOISE MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	13/01/1965
MIL-STD-740-1	MILITARY STANDARD – AIRBORNESOUND MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	30/12/1986
MIL-STD-740-2	MILITARY STANDARD – STRUCTUREBORNE VIBRATORY ACCELERATION MEASUREMENTS AND ACCEPTANCE CRITERIA OF SHIPBOARD EQUIPMENT	30/12/1986
MIL-STD-777-E(SH)	MILITARY STANDARD – SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS FOR NAVAL SURFACE SHIPS	07/02/1986
MIL-STD-794E	MILITARY STANDARD - PARTS AND EQUIPMENT, PROCEDURES OF PACKAGING AND PACKING OF	16/07/1982
MIL-STD-2073-1B	MILITARY STANDARD - DOD MATERIEL PROCEDURES FOR DEVELOPMENT AND APPLICATION OF PACKAGING REQUIREMENTS	21/06/1991
MIL-S-901D (NAVY)	MILITARY SPECIFICATION – SHOCK TEST, H.I. SHIPBOARD MACHINERY, EQUIPMENT, AND SYSTEM REQUIREMENTS	17/03/1989
MIL-B-117F	MILITARY SPECIFICATION – BAGS, SLEEVES AND TUBING	30/06/1988
MIL-B-117F (AMEND.1)	MILITARY SPECIFICATION – BAGS, SLEEVES AND TUBING	23/04/1990
MIL-B-131H	MILITARY SPECIFICATION – BARRIER MATERIALS,WATERVAPORPROOF, GREASEPROOF, FLEXIBLE, HEAT-SEALABLE	17/02/1987
MIL-E-17555H	MILITARY SPECIFICATION – ELECTRONIC AND ELECTRICAL EQUIPMENT, ACCESSORIES, AND PROVISIONED ITEMS (REPAIR PARTS): PACKAGING OF	15/11/1984
MIL-P-116J	MILITARY SPECIFICATION – PRESERVATION,	
MIL-P-116J-Amend. 1	MILITARY SPECIFICATION – PRESERVATION,	
MIL-P-197G	MILITARY SPECIFICATION – PACKAGING OF ANTI-FRICTION BEARINGS, ASSOCIATED PARTS AND SUBASSEMBLIES	
MIL-P-3420F	MILITARY SPECIFICATION – PACKAGING MATERIALS, VOLATILE CORROSION INHIBITOR, OPAQUE	

ANTI-SHOCK, ANTI-VIBRATION CERTIFICATED PUMPS ACCORDING TO NAVAL STANDARDS

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
83/58.U - 04.07.83	86/63.V - 04.07.83	101 G2	INTERMARINE	"LERICI" MINEHUNTER
83/58.U - 04.07.83	83/63.V - 04.07.83	101 G2	INTERMARINE	"LERICI" MINEHUNTER
85/121.U - 26.11.85	85/70.V - 30.09.85	101 G2	FINCANTIERI	"MINERVA" CORVETTE
83/69.U - 04.07.83	83/74.V - 04.07.83	BT 201	INTERMARINE	"LERICI" MINEHUNTER
83/61.U - 04.07.83	83/66.V - 04.07.83	BT 251 K	INTERMARINE	"LERICI" MINEHUNTER
83/59.U - 04.07.83	83/64.V - 04.07.83	BT 301	INTERMARINE	"LERICI" MINEHUNTER
34 - 13.06.77		BT 302	CANT.NAV.RIUNITI	CLASS "LUPO" FRIGATE
118 A/S - 31.07.81		BT 402 K	CANT.NAV.RIUNITI	CLASS "LUPO" FRIGATE
	82/7 V - 06.02.82	BT 402 K	CANT.NAV.RIUNITI	CLASS "MAESTRALE" FRIGATE
82/24 U. 06.02.82	82/8 V - 06.02.82	BT 501	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
90/7.U - 19.01.90	90/5.V - 19.01.90	BT 503	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
85/30.U - 07.05.85		CS 22	FINCANTIERI	"MINERVA" CORVETTE
	82/6 V - 06.02.82	E40R	CANT.NAV.RIUNITI	CLASS "MAESTRALE" FRIGATE
82/6 U - 06.02.82	82/9 V - 06.02.82	H341 S	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
	82/5 V - 06.02.82	H344SS	CANT.NAV.RIUNITI	CLASS "MAESTRALE" FRIGATE
88/111.U - 23.12.88	88/87.V - 23.12.88	H344SS	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
83/67.U - 04.07.83	83/72.V - 04.07.83	IN 100	INTERMARINE	"LERICI" MINEHUNTER
83/154.U - 06.12..83	83/121.V - 04.07.83	IN 200	SILVANI ANTINCENDI	"GARIBALDI" CRUISER HELICOPTER CARRIER

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
90/79.U - 24.10.90	90/70.V - 24.10.90	IN 300	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
83/68.U - 04.07.83	83/73.V - 04.07.83	IN 40	INTERMARINE	"LERICI" MINEHUNTER
90/42.U - 18.06.90	90/35.V - 18.06.90	MCA 100-162M	DAVIDSON	"LERICI" MINEHUNTER
	82/18 V - 10.02.82	MCV 65	CANT.NAV.RIUNITI	CLASS "MAESTRALE" FRIGATE
	88/85.V - 23.12.88	MM 100/125	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
Homologated according to UMM 1008	MM 100/125			
85/27.U - 07.05.85		MU 100-200V	A.T.I.S.A.	"MINERVA" CORVETTE
82/19 U - 06.02.82	82/12V - 06.02.82	MU 125-250	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
88/95.U - 12.12.88	88/78.V - 12.12.88	MU 125-250	AERIMPIANTI	CLASS "ANIMOSO" SUPERHUNTER
88/110.U - 23.12.88	88/86.V - 23.12.88	MU 32-160M	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
82/15 U - 06.02.82	82/14V - 06.02.82	MU 32-200	SCAM SPA	"GARIBALDI" CRUISER HELICOPTER CARRIER
83/64.U - 04.07.83	83/69.V - 04.07.83	MU 32-200	INTERMARINE	"LERICI" MINEHUNTER
80/25.U - 26.03.80		MU 40-250	NAVALCOSTARMI	"LERICI" MINEHUNTER
82/90.U - 05.07.82	82/63.V - 05.07.82	MU 40-250	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
83/60.U - 04.07.83	83/65.V - 04.07.83	MU 40-250	INTERMARINE	"LERICI" MINEHUNTER
83/63.U - 04.07.83	83/68.V - 04.07.83	MU 40-250	INTERMARINE	"LERICI" MINEHUNTER
83/65.U - 04.07.83	83/70.V - 04.07.83	MU 40-250	INTERMARINE	"LERICI" MINEHUNTER
85/29.U - 07.05.85		MU 40-250	A.T.I.S.A.	"MINERVA" CORVETTE
83/62.U - 04.07.83	83/67V. - 04.07.83	MU 40-250	INTERMARINE	"LERICI" MINEHUNTER
82/202.U - 16.12.82	82/117.V - 16.12.82	MU 40-250A	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
88/92.U - 12.12.88	88/75.V - 12.12.88	MU 50-160 M	INSTEAM	CLASS "ANIMOSO" SUPERHUNTER
80/24.U - 25.03.80		MU 50-250	NAVALCOSTARMI	"LERICI" MINEHUNTER
81/1.U - 19.01.81		MU 50-250	NAVALCOSTARMI	UNIT M.M.
81/2.U - 19.01.81	81/1.V - 19.01.81	MU 50-250	NAVALCOSTARMI	UNIT M.M.
90/38.U - 07.05.90	90/32.V - 07.05.90	MU 50-250	INTERMARINE	"LERICI" MINEHUNTER
90/39.U - 07.05.90	90/33.V - 07.05.90	MU 65-200	INTERMARINE	"LERICI" MINEHUNTER
82/20 U - 06.02.82	82/10V - 06.02.82	MU 65-315	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
88/93.U - 12.12.88	88/76.V - 12.12.88	MU 65-315	AERIMPIANTI	CLASS "ANIMOSO" SUPERHUNTER
88/112.U - 23.12.88	88/88.V - 23.12.88	MU 65-315	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
89/25.U - 25.05.89		MU 65-315 A	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
90/8.U - 19.01.90	90/6.V - 19.01.90	MU 65-315 A	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
90/6.U - 19.01.90	90/4.V - 19.01.90	MU 65-315 M	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
82/17 U - 06.02.82.	82/13V - 06.02.82.	MU 80-200	SCAM	"GARIBALDI" CRUISER HELICOPTER CARRIER
83/66.U - 04.07.83	83/71.V - 04.07.83	MU 80-200	INTERMARINE	"LERICI" MINEHUNTER
85/28.U - 07.05.85		MU 80-250	A.T.I.S.A.	"MINERVA" CORVETTE
148 - 27.05.85		MU 80-250 V	FINCANTIERI	"MINERVA" CORVETTE
82/18 U - 06.02.82	82/11V - 06.02.82	MU 80-315	ITALCANTIERI	"GARIBALDI" CRUISER HELICOPTER CARRIER
82/16 U - 06.02.82	82/15V - 06.02.82	MU 80-315	SCAM SPA	"GARIBALDI" CRUISER HELICOPTER CARRIER
88/94.U - 12.12.88	88/77.V - 12.12.88	MU 80-315	AERIMPIANTI	CLASS "ANIMOSO" SUPERHUNTER

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
90/4.U - 16.01.90	90/2.V - 16.01.90	SMBAR210R40	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
91/10.U – 15.2.91	91/12.V – 15.2.91	MU 40-200 S	FINCANTIERI	SUBMARINE "LONGOBARDO"
91/11.U – 15.2.91	91/13.V – 15.2.91	MU 40-250A	FINCANTIERI	SUBMARINE "LONGOBARDO"
91/12.U – 15.2.91	91/14.V – 15.22.91	MU 65-200S	FINCANTIERI	SUBMARINE "LONGOBARDO"
91/13.U – 18.2.91	91/15.V – 18.2.91	IN 15	FINCANTIERI	SUBMARINE "LONGOBARDO"
91/30.U – 20.3.91	91/33.V – 20.3.91	BT 201	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
92/2.U – 22.1.92	92/2.V – 22.1.92	BT 202	FINCANTIERI	CLASS "ANIMOSO" SUPERHUNTER
92/3.U – 24.1.92	92/3.V – 24.1.92	MU 32-200 M	FINCANTIERI	SUBMARINE "LONGOBARDO"
92/7.U – 25.3.92	92/7.V – 25.3.92	MU 32-200 LM	FINCANTIERI	SUBMARINE CLASS "SAURO"
92/6.U – 25.3.92	92/6.V – 25.3.92	MU 32-160 LM	FINCANTIERI	SUBMARINE CLASS "SAURO"
92/8.U – 25.3.92	92/8.V – 25.3.92	ACE 038N1 IRBO	FINCANTIERI	SUBMARINE CLASS "SAURO"
01/03	01/03	ACG060K6 NVBO	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
03/03	02/03	V50-3ST	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
07/03	05/03	ACG032N3 NVBP	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
13/03	08/03	MU 80-250M	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
20/03	11/03	MU 125-250M	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
33/05	09/05	MU 40-315M	FINCANTIERI	AIRCRAFT CARRIER "CAVOUR"
16/04	23/3	MU 125-250	FINCANTIERI	HORIZON FRIGATES
15/04	20/3	MU 50-250	FINCANTIERI	HORIZON FRIGATES

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
33/3	19/3	MU 100-315	FINCANTIERI	HORIZON FRIGATES
32/3	18/3	IN 100 NDB	FINCANTIERI	HORIZON FRIGATES
31/3	17/3	ACF100N4 NVBO	FINCANTIERI	HORIZON FRIGATES
20/04	09/4	ACG045K7 NTBP	FINCANTIERI	HORIZON FRIGATES
24/05	08/05	MU 40-250	FINCANTIERI	HORIZON FRIGATES
05/07	03/07	MU 65-200 LMS	NAVANTIA	S-80 SUBMARINES
12/07	10/07	AP 40 RA	NAVANTIA	S-80 SUBMARINES
11/07	07/07	BTA 501	NAVANTIA	S-80 SUBMARINES
15/07	15/07	50G5 VE	NAVANTIA	S-80 SUBMARINES
14/07	11/07	BT 201 V	NAVANTIA	S-80 SUBMARINES
13/07	08/07	MU 25-160 LM	NAVANTIA	S-80 SUBMARINES
16/07	09/07	INML 15	NAVANTIA	S-80 SUBMARINES
02/07	02/07	MU 65-200 VMS	NAVANTIA	S-80 SUBMARINES
	02/08	ACD 025L6 NTBP	NAVANTIA	S-80 SUBMARINES
	01/08	INML 50	NAVANTIA	S-80 SUBMARINES
6/11	1/11	MU 50-160 LMBS	NAVANTIA	S-80 SUBMARINES

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
5/11	2/11	MU 50-250 LMB	NAVANTIA	S-80 SUBMARINES
7/11	3/11	IN14ND / IN10ND	NAVANTIA	S-80 SUBMARINES
09/08	05/08	BT 302	INTERMARINE	MINEHUNTER FINNISH NAVY
01/09	7/09	IN 70	INTERMARINE	MINEHUNTER FINNISH NAVY
03/09	2/09	MCA 32-200 M	INTERMARINE	MINEHUNTER FINNISH NAVY
14/09	5/09	BT 201	INTERMARINE	MINEHUNTER FINNISH NAVY
22/09	4/09	MU 50-250 MA	INTERMARINE	MINEHUNTER FINNISH NAVY
36/09	11/09	IN 150	INTERMARINE	MINEHUNTER FINNISH NAVY
34/09	10/09	MU 32-250 M	INTERMARINE	MINEHUNTER FINNISH NAVY
1/10	9/09	MU 50-315 M	INTERMARINE	MINEHUNTER FINNISH NAVY
35/09	12-set	P 50	INTERMARINE	MINEHUNTER FINNISH NAVY
03/10	2/10	CN 65-40-315 M	INTERMARINE	MINEHUNTER FINNISH NAVY
09/07		MU 100-250	FINCANTIERI	FREMM FRIGATES
10/08		MU 50-160 M	FINCANTIERI	FREMM FRIGATES
14/08		MU 100-315	FINCANTIERI	FREMM FRIGATES
1/09		MU 125-500	FINCANTIERI	FREMM FRIGATES
06/10		MU 65-315	FINCANTIERI	FREMM FRIGATES

SHOCK TEST Certificate Number	VIBRATION TEST Certificate Number	PUMPS	SHIPYARD	VESSEL
09/10		MU 100-250	FINCANTIERI	FREMM FRIGATES
10/10		MU 50-160 LBE	FINCANTIERI	FREMM FRIGATES
12/10		MU 40-250	FINCANTIERI	FREMM FRIGATES
15/11	5/11	BT 312	INTERMARINE	MINEHUNTER ITALIAN NAVY
20/13	20/13	MU 50-200 LMB	ISOTTA FRASCISHINI MOTORI SPA	MINEHUNTER KOREA
20/2015	17/2015	MU 25-160 M	INTERMARINE	MINEHUNTER ALGERIAN NAVY
27/2015	26/2015	MU 50-250 M	INTERMARINE	MINEHUNTER ALGERIAN NAVY
22/2015	19/2015	MU 65-250 M	INTERMARINE	MINEHUNTER ALGERIAN NAVY
21/2015	18/2015	MU 32-200 M	INTERMARINE	MINEHUNTER ALGERIAN NAVY
	16/2015	MU 25-200 M	INTERMARINE	MINEHUNTER ALGERIAN NAVY
	23/2015	BT 313	INTERMARINE	MINEHUNTER ALGERIAN NAVY
101/2017	100/2017	MU 50-200 M	INTERMARINE	MINEHUNTER TAIWAN NAVY
106/2017		MU 25-200 M	INTERMARINE	MINEHUNTER TAIWAN NAVY
107/2017		IN 70	INTERMARINE	MINEHUNTER TAIWAN NAVY
108/2017		BT 313	INTERMARINE	MINEHUNTER TAIWAN NAVY
112/2017		MU 50-250 M	FINCANTIERI	PPA VESSEL ITALIAN NAVY
113/2017		MU 125-250	FINCANTIERI	PPA VESSEL ITALIAN NAVY

MATERIALS

CAST IRON (GREY CAST IRON G25, NODULAR CAST IRON GS400, NI-RESIST CAST IRON)
 BRONZE (TIN BRONZE B10 AND BZN4, NICKEL-ALUMINIUM BRONZE ASTM B148-C95800)
 MARTENSITIC STAINLESS STEEL (AISI 410 – 420), AUSTENITIC STAINLESS STEEL (AISI 304, AISI 304 L, AISI 316 L, AISI 317 L)
 CARBON STEEL (WCB AND LCB GRADE)
 DUPLEX AND SUPERDUPLEX (ASTM A890 GR. 4A, 5A, CD4MCU)
 SPECIAL ALLOYS (MONEL, HASTELLOY, ALLOY 20, INCOLOY 825)

Materials	ASTM	DIN	UNS
ALUMINIUM BRONZE	B 148	Cu Ni Al Bz F 60	C 95800
MONEL 400	A494 M-35-1	24.365	N 24135
AISI 316	A351 – CF8M	14.408	J92900
AISI 316L	A351 CF3M	14.404	J92800
DUPLEX (2205)	A890 Gr. 4A	14.462	J92205
SUPER DUPLEX (2507)	A890 Gr. 5A	14.469	J93404

Any other material combination can be supplied.

ITALIAN NAVY - Vessels References
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TYPE	NAME
AIRCRAFT CARRIER	GARIBALDI, VITTORIO VENETO, CAVOUR
LANDING HELICOPTER DOCK - LHD	TRIESTE
LOGISTIC SUPPORT SHIP	VULCANO
DESTROYER	ARDITO, AUDACE
SUPERHUNTER	DURANS DE LA PENNE, MIMBELLI
FRIGATE	MAESTRALE, GRECALE, LIBECCIO, SCIROCCO, ALISCO, EURO, ESPERO, ZEFFIRO, LUPO, SAGITTARIO, PERSEO, ORSA
FRIGATE (HORIZON CLASS)	ANDREA DORIA, CAIO DUILIO
FRIGATE (FREMM CLASS)	BERGAMINI, FASAN, MARGOTTINI, CARABINIERE, ALPINO, RIZZO, MARTINENGO, MARCEGLIA, SCHERGAT, BIANCHI
CORVETTE	MINERVA, URANIA, DANAIDE, SFINGE, DRIADE, FENICE, CHIMERA, SIBILLA, ALCIONE, AIRONE
MULTIPURPOSE PATROL VESSEL	HULL 6261 - 6262 - 6263 - 6264 - 6265 - 6266 - 6267
PATROL VESSEL	GORGONA, TREMITI, CAPRERA, PANTELLERIA, LIPARI, CAPRI
PATROL BOAT	ESPLORATORE, SENTINELLE, VENDETTA, CASSIOPEA, LIBRA, SPICA, VEGA, ARTIGLIERE, AVIERE, BERSAGLIERE, GRANATIERE,
	CIGALA FULGOSI, COM.TE BORSINI, COM.TE BETTICA, COM.TE FOSCARI
PATROL BOAT (DICIOTTI CLASS)	U. DICIOTTI, DATTILO, FIORILLO, PELUSO, CORSI
SUBMARINE	SAURO, FECIA DI COSSATO, LEONARDO DA VINCI, MARCONI, PELOSI, PRINI, LONGOBARDO, GAZZANA
MINEHUNTER	LERICI, SAPRI, MILAZZO, VIESTE, GAETA, TERMOLI, ALGHERO, NUMANA, CROTONE, VIAREGGIO, CHIOGGIA, RIMINI

TYPE	NAME
WATER TANKER	PIAVE, BASENTO, BRADANO, BRENTA, TIRSO, TICINO, BORMIDA, ETNA
IDROCEANIC VESSEL	MAGNAGHI, MIRTO, PIOPPPO
RESEARCH VESSEL	ARETUSA, GALATEA
PURPOSE RESCUE VESSEL	SAN GIORGIO, SAN MARCO, SAN GIUSTO
RESCUE VESSEL	ANTEO, PAOLUCCI, PEDRETTI, MARINO
TRAINING VESSEL	AMERIGO VESPUCCI, PALINURO
TRAINING VESSEL	ROSSETTI, CARABINIERE, MURENA
FLOATING POONTON	HULL 190
OCEAN GOING TUG	HULL 65, HULL 66, HULL 67, HULL 82, HULL 83, HULL 84, HULL 85, HULL 86, HULL 87, HULL 88
FLOATING DOCK	HULL 75, HULL 105, HULL 89, HULL 90, HULL 91
DEEP-SEA PATROL BOAT	SIRIO, ORIONE

PUMPS AND SERVICE DETAILS

LOGISTIC SUPPORT SHIP - HULL 6259

SHIPYARDS: FINCANTIERI (Italy)

YEAR: 2015

PUMP TYPE	SERVICE	UNITS
CARGO - 544		
HC 300-90/2 N	NATO F-76 Fuel	4
HC 232-66/2 N	NATO JP5 Kerosene	2
50 G3 V	Fresh water	2
FIRE (fixed diesel engine) - 521		
MU 40-250 AF	Fire fighting	2
HYDROPHORE UNIT - 533		
BT 313	Fresh water	2 Modules (Made by 2 e/pumps each)
AIR CONDITIONING - 514		
MU 150-315 LM	Sea water	4
MU 50-160 LM	Sea water	1
MU 65-200 M	Boiler feeding	2
MU 125-250 LM	Chilled water	2 Modules (Made by 3 e/pumps each)
MU 65-250 LM	Emergency sea water	2
MU 50-200 LM	Emergency chilled water	2
HUSKY 1050-647109	Drainage system	1

PUMP TYPE	SERVICE	UNITS
HULL SERVICE - 521		
BT 402 VE	Demineralized water	2
G3TMK	Sewage transfer	1
BT 311	Hot water	2 Modules (Made by 2 e/pumps each)
MU 40-250 LM	F.W Disaster relief	1 Module (Made by 2 e/pumps each)
MU 50-160 M	EPM Cooling F.W.	2 Modules (Made by 2 e/pumps each)
VHC 180 71/2 N	NATO F-76 Fuel transfer	2
BT 507	NATO JP5 transfer	1
HUSKY 1050-647109	NATO JP5 stripping transfer	1
HUSKY 1590-DBC-GGG	NATO F-76 Fuel stripping	1
HUSKY 1590-DBC-311	NATO JP5 stripping	2
SWL 5000 G	Bilge	6
BN 35-6L	Oily sludge tank emptying	1
G3TMK	Black & grey water tank emptying	2
BN 5-6 L	Galley water tank emptying	1
BN 5-6 L	Oil and grease tank emptying	1
INML 15 B	Boats fuel oil refuelling	1
MU 125-315 LM	Ballast	2 Modules (Made by 2 e/pumps each)
BN 2-6 L	Chain locker draining	1
MU 125-315	HPSW Fire	4
MU 125-400 M	Hull service central cooling F.W.	2
MU 125-400 M	Hull service S.W.	2
HUSKY 1590-DBC-311	Mezzanine deck oil leakage tank	2

PUMP TYPE	SERVICE	UNITS
HUSKY 1590-DBD-311	Ras elevator pit oil leakage	1
HUSKY 1050-647109	Motor Drain water	2
ENGINE ROOM - 201		
MU 200-315	Diesel engine S.W. Cooling	2 Modules (Made by 2 e/pumps each)
MU 80-160 M	Diesel generator S.W. Cooling	2 Modules (Made by 3 e/pumps each)
IN 200 NDB E	Diesel generator L.O. transfer	2
INML 25 B E	Reduction gear L.O. transfer	2
IN 200 NDB E	Dirty oil transfer	2
INML 15 B E	Hydraulic oil transfer	2
HUSKY 1050-647121	Lube/Hydraulic oil loading	1
MU 80-160 M	Reduction gear & aux. S.W. Cooling	2 Modules (Made by 2 e/pumps each)
MU 65-400 M	Engine room ventilation S.W.	2
MU 65-200 LM	NBC S.W.	2

FREMM FRIGATES, 10 UNITS (HULL 6145 - 6146 - 6209 - 6210 - 6211 - 6212 - 6247 - 6248 - 6276 - 6277)

SHIPYARDS: FINCANTIERI (Italy)

YEAR: 2007

For each vessel

PUMP TYPE	SERVICE	UNITS
FIRE FIGHTING		
MU 125-500	Fire fighting	2 Modules (made by 2 e/pumps each)
ENGINE ROOM		
MU 100-250	Circulate S.W. for propulsion lines cooling	1 Module (made by 2 e/pumps each)
MU 40-160	S.W. For ASFT engine room NBC ventilation collers and fancoils	1
IN150 NDB	Transfer drained fuel oil	2
IN100 NDB	RG & FCPP lube oil transfer	1
IN100 NDB	DG lube oil transfer	2
IN100 NDB	Dirty oil transfer	2
IN100 NDB	FCPP lube oil transfer	1
MU 65-315	S.W.for engine room NBC ventilation collers and fancoils	1
MU 50-250	S.W.for aux. Propulsion engine room fancoils	1
HULL SERVICE		
MU 65-315	Hull service sea water	2
BT 402	Demineralized water	1
BT 301	Hot water circulating	1 Module (made by 2 e/pumps each)
ACF 100N4 NVBO	Fueo oil transfer	2
HUSKY 1040-D7C-377	Compressed air portable stripping	1

PUMP TYPE	SERVICE	UNITS
INML 15	Boats fuel oil refilling	1
P 50 E	Bilge	5
MCA 80-280	Black & grey water tank	1 Module (made by 2 e/pumps each)
P 50 E	Sludge	1
BT 504	JP5 System	2
HUSKY 1040-D74-666	Compressed air portable bilge	2
MU 40-250	Sea water Empar	1 Module (made by 2 e/pumps each)
HUSKY 2150-DFC-GGG	Compressed air portable fuel supply (loading)	1
HUSKY 1040-D7C-GGG	Compressed air portable dirty oil / sludge tank	3
MU 40-160	Tank drainage VLS	1
MU 50-160 LBE	Water mit feeding	2
BT402	Fresh water HYDROPHORE UNIT	1 Module (made by 2 e/pumps each)
AIR CONDITIONING		
MU 100-315	CHILLED WATER	3 Modules (made by 2 e/pumps each)
BT 301	Drainage water tank & outboard discharge	4

HORIZON FRIGATES, 4 UNITS (HULL 6108-6109 + 2 UNITS)**SHIPYARDS: FINCANTIERI (Italy) - DCNS (France)****YEAR: 2003**

For each vessel:

PUMP TYPE	SERVICE	UNITS
ENGINE ROOM		
MU 25-250	Engine rooms coolers sea water	2
IN150 NDB	GT fuel drain tank transfer	2
IN100 NDB	Drain DG lube oil transfer	2
IN100 NDB	Reduction Gear lube oil transfer	2
IN100 NDB	Dirty lube oil transfer	2
HULL SERVICE		
MU 50-315	Auxiliary machineries sea water	2
IA3-140	Portable not submersible	2
ACF100NA NVBO	Fuel oil transfer	2
IN-ML 15	Boats Fuel oil refilling	1
IN-ML40	BV tank fuel oil stripping	1
HUSKY 1040 D74-3GG	Stripping tank single air pump	1
P50	Dewatering /scuppering	2
HUSKY 1040 D74-3GG	Dewatering /scuppering portable single air pump	1
MCA 50-250R	Galley water tank draining	1
MCA 50-250R	Laundry water tank draining	1
MCA 50-250 S	Grey water tank draining	1
MCA 50-250 S	Black water tank draining	1
AIR CONDITIONING		
MU 125-250	Air conditioning sea water	6
MU 100-315	Air conditioning chilled water	3
ACG052K7	Fuel system pumping & filtering skid	4

AIRCRAFT CARRIER C. CAVOUR (HULL 6090)

SHIPYARD: FINCANTIERI

YEAR: 2002

PUMP TYPE	SERVICE	UNITS
ENGINE ROOM		
MU 80-250M	Engine room cooler sea water system	4
MU 125-250M	Reduction gear sea water cooling	4
MU 80-400M	Sea water cooling system	2
ACE 038K3NVBP	Fuel oil drainage emptying	3
HUSKY 1590 DB3 318	Dewatering / scuppering	1
MCA80-280M	Bilge Module	1
HUSKY 1040 D72 988	Dewatering/scuppering portable single air pump	3
IN200	Portable gear clean lube oil	1
IN25	Gear clean lube oil	1
ACG060K6NVB0	Reduction gear fuel oil transfer	1
ACG060K6NVB0	Reduction gear fuel oil transfer	1
ACE032N3NVB0	Fuel oil transfer	3
V50-3ST	Dirty oil emptying	2
ACF125L4 NVBO	Reduction gear lubrication	4
P50	Ballast	4
MCA 80-280M	Bilge	1
T40	Hot water circulation modules	2
P60V	Gas turbine draining service	2
MU 65-315A	Fire fighting diesel pump	4
MU 80-400M	Sea water refrigerating general services	2
MU 80-160M	Bilge	1

PUMP TYPE	SERVICE	UNITS
HULL SERVICE		
MCA 80-280M	Sewage emptying	1
P35	Drainage pump (for chains pit)	1
P50	Gasoil storage	2
BT302	De-mineralised water	1
BT502	Fresh water	3
BT313	Hot Fresh water circulating	3
LPQ110L1	Fuel oil transfer	4
ACG060K6	Fuel oil transfer	1
50G3	Kerosene feed pump	2
MU65-315M	Kerosene transfer	2
P50	Bilge	5
T40	Hot water circulation	4
MCA 80-280M	Sewage tanks emptying	1
P50	Transfer emptying sewage	3
P60	Transfer emptying sewage	2
P50	Portable bilge	2
MU 50-200 MPF	Portable diesel engine fire pump	7
AIR CONDITIONING		
MU125-250M	Sea water circulating modules	6
MU125-400M	Cooling water conditioning	9
MU 80-400M	Fresh water conditioning	6
FUEL OIL FEEDING SYSTEM		
ACG052N7 NVBO	Gas turbine gasoil feed	6

AIRCRAFT CARRIER G. GARIBALDI (HULL 4367)

SHIPYARD: ITALCANTIERI

YEAR: 1982

PUMP TYPE	SERVICE	UNITS
IN 200	Foam System	2
T 40	Hot Water Circulating	3
MU 40-250A	Galley Cooling System	2
H 341 S	F.W Pump (equivalent to G type)	1
H 343 SS	Distillated Water Pump (equivalent to G type)	1
BT 501	Cold Fresh Water	4
BT 301 K	Laundry Draining System	1
BT 201 K	Refrigerator Draining System	1
MU 40-250	Main Jacket Pump	2
MU 80-315	Sea Water Circulation	2
MU 80-200	Brine System	2
MU 32-200	Distillate Water System	2
MU 32-200	Condensate System Pump	2
MU 65-315	H.W.Pump	4
MU 80-315	Cold F.W.Pump	9
MU 125-250	Sea Water Pump	3

SUBMARINE SAURO CLASS, IV SERIES (HULL 5878 - 5879)

SHIPYARD: FINCANTIERI

YEAR: 1991

For each submarine:

PUMP TYPE	SERVICE	UNITS
MU 65-200S	Cooling system 60T/H	2
MU 40-200S	Cooling system 20T/H	2
MU 40-250S	Bilge	2
IN 15	Fuel oil transfer	1
MU 32-200M	Fresh water	2
MU 32-160L/M	Cooling system	2
ACE 038-N1 IRBO	Lubrication system	3
MU 32-200LM	Hot fresh water circulating system	1

PATROL VESSELS (HULL 6061 - 6062 - 6063 - 6064)

SHIPYARD: FINCANTIERI

YEAR: 1999

For each vessel:

PUMP TYPE	SERVICE	UNITS
BT 506	Kerosene Transfer Pump	2
MU 40-315	Ballast	2
BT 303	F.W Pump	2
MU 80-250	Sea Water Cooling System	2
MU 40-315	Hot Fresh Water Circulating	2

PUMP TYPE	SERVICE	UNITS
65 G2	Fire Fighting	4
MU 65-315	Cool Fresh Water Circulating	3
MU 65-315	Main Engine S.W. Pump	2
MCA 50-280	Grey Water	2
T 40	Hot Fresh Water Circulating	2
P 35	Sewage	1
P 60 V	Sewage/Bilge	2
P 50 V	Dirty Oil Transfer	1
IN 15 V	Oil Transfer	1
P 60 V	Laundry Transfer Pum	2
SWL 5000	Bilge	2

RESEARCH VESSELS ARETUSA & GALATEA

SHIPYARD: INTERMARINE

YEAR: 1999

For each vessel:

PUMP TYPE	SERVICE	UNITS
IN 25	L.O Transfer	1
IN 40	L.O. Transfer	1
P 35	Dirty Oil Transfer	1
P 35	Sewage	1
P 60	Grey Water	3
40 G3	Fire Fighting	3

PUMP TYPE	SERVICE	UNITS
MU 25-160 M	F.W Circulation System	2
MU 25-160 M	Hot Water Circulation System	2
MU 25-160 M	Prop. M.E.Cooling System	2
MU 25-160 M	S.W Antifouling System	2
MU 32-200 M	Diesel Alt Cooling System	3
MU 40-160 M	Sea Water Cooling System	2
MU 65-250 M	Sea Water Cooling System	2

SUPERHUNTERS ANIMOSO & ARDIMENTOSO

SHIPYARD: FINCANTIERI

YEAR: 1986 - 1987

PUMP TYPE	SERVICE	UNITS
MM 100-125	Fire Fighting Pump - Navy Homologate	8
MU 65-315 M/40	Sea Water Circulation	4
MU 32-160 M	Hot Fresh Water Circulation	2
BT503	Kerosene Transfer	2
MU 65-315A	Kerosene Transfer	2
MU 65-315 AX	Emergency Fire	2
MU 65-315 M/40	S.W kerosene Cooling System	1
MU 100-250M	Oil Cooling System	4
MU 65-315 M/30	Sea Water Cooling System	4
MU 65-160 ES	Main Engine S.W Cooling System	2

PUMP TYPE	SERVICE	UNITS
MU 80-315	FW Cooling System	6
MU 125-250	Sea Water Cooling System	2
MU 65-315	Main Hot Fresh Water	2
MU 50-160M	Hot Water Circulation	2
T40	Fresh Water Pump	3
H 344SS-TM	Cold Fresh Water	4
BT201	Distilled Water Engine Room	2

MINEHUNTERS LERICI AND GAETA CLASS (12 VESSELS)

SHIPYARD: INTERMARINE

YEAR: 1983 - 1989

For each vessel:

PUMP TYPE	SERVICE	UNITS
MU 32-200	Sanitary Pump	2
MU 80-200	Sea Water Motor Cooling System	2
101 G2	Fire Fighting	3
BT 251K	Laundry Hot Fresh Water	2
BT 201	Hot Water Circulation System	2
IN 100	Fuel Oil Transfer	2
IN 40	Lube Oil Transfer	1
IN 40 (portable)	Lube Oil Transfer	1
MU 40-250	Fresh Water Contitioning System	2

PUMP TYPE	SERVICE	UNITS
MU 40-250	Fresh Water Cooling System	2
MU 40-250	Hot Water Circulation System	1
BT 301	Ballast	1
MU 50-250	Air Cooling System	2
MU 80-250	Engine Cooling System	3
MU 65-200	Sea Water Cooling System	2
MCA 100-162M	Bilge	1

WATER TANK ETNA (HULL 5957)

SHIPYARD: FINCANTIERI

YEAR: 1995

PUMP TYPE	SERVICE	UNITS
32 G4	Sea Water Cooling System	4
BT 502	Lube Oil Transfer	4
MCA 50-280	Ballast	4
MU 125-250	Bilge	4
MU 200-250	Sea Water Circulation System	4
MU 25-200	Ballast	4
MU 32-160LM	Hot Water Circulating System	4
MU 32-200	Pre-heating Water Circulation System	4
MU 32-250	Sprinkler Pump	4
MU 50-200	Grey Water Circulating System	6
MU 50-250	S.W Generator Pump	6
MU 80-315	Main S.W Pump	6

FOREIGN NAVIES

ROYAL THAI NAVY

MINEHUNTERS (2 UNITS)

SHIPYARD: INTERMARINE

YEAR: 1997

ROYAL MALAYSIAN NAVY

MINEHUNTERS (4 vessels)

SHIPYARD: INTERMARINE

year: 1983

CORVETTES (HULL 907 - 908 - 909 - 910)

SHIPYARD: CANT. NAV. RIUNITI SPA

YEAR: 1981

ECUADORIAN NAVY

FRIGATES (HULL 888 - 889 - 890 - 891 - 892 - 893)

SHIPYARD: CANT. NAV. RIUNITI SPA

YEAR: 1981

VENEZUELAN NAVY

FRIGATES (HULL 304 - 305 - 306 - 307)

SHIPYARD: CANT. NAV. RIUNITI SPA

YEAR: 1980

FRIGATES (HULL 851 - 852 - 853 - 854 - 855 - 856)

SHIPYARD: CANT. NAV. RIUNITI SPA

YEAR: 1981

LOGISTIC SUPPORT VESSEL (HULL P 093)

SHIPYARD: HYUNDAI HEAVY INDUSTRIES (KOREA)

YEAR: 1999

PUMP TYPE	SERVICE	UNITS
MU 50-160	A/C chilled water pump	2
MU 40-250 L	Cargo D/G S.W. cooling pump	2
MU 80-250 LE	Bilge, fire&general service pump	2
MU 80-250 L	Fire pump	3
MU 200-250 LE	Ballast pump	2
MU 40-200 L	C.P.P.&R/G cooling S.W. Pump	2
MU 65-315 A	Emergency fire pump	1
MU 100-250 L	M/E jacket water stand-by pump	2
MU 80-250 L	M/E AC/OC water stand by pump	2
MU 40-250 L	S/S D/G S.W. cooling pump	2
MU 65-315 L	A/C cooling S.W. pump	2
MU 32-250 V	S/S ref. cooling S.W. Pump	1
SCB 22	Sewage transfer pump	1
MU 32-160	Hot water circulation pump	1
MCA 50-250	Waste water pump	1
MU 32-250 V	Cargo ref. cooling S.W. Pump	1
IN 70	M/E F.O. stand-by pump	2
IN 150	F.O. transfer pump	2
IN 70	L.O. transfer pump	1
IN 40	L.O. replacement pump	1
IN 70	Sludge pump rev. A	1
IN 70	C.P.P. hyd. oil transfer pump	1

NIGERIAN NAVY**MINEHUNTERS (2 UNITS)****SHIPYARD: INTERMARINE****YEAR: 1985**

For each vessel:

PUMP TYPE	SERVICE	UNITS
BT201	Hot Water Circulating	2
BT 251 K	Potable Water	2
BT 311	Oily Water Transfer	1
IN 100	Fuel Transfer	2
IN 25	Waste Oil Transfer	1
IN 40	Oily Waste Transfer	1
IN 40	Lube Oil Transfer	1
MU 40-315	Chilled Water Circulating	2
MU 50-200A	Water Chilling	2
MU 50-250	Sea Water Cooling	3

FINNISH NAVY**MINEHUNTERS (3 UNITS)****SHIPYARD: INTERMARINE****YEAR: 2007**

For each vessel:

PUMP TYPE	SERVICE	UNITS
MU 50-315 M	Aux. Sea water cooling	3
IN 70	Lube Oil Transfer	1
MU 50-315 M	HVAC Chilled Water circ	2
MU 50-250 MA	WCU Sea water cooling	2

PUMP TYPE	SERVICE	UNITS
MU 50-315 M	HVAC Hot water circulation	2
CN 65-40-315 M	Fire fighting	3
BT 302	Cold potable water circulation	2
BT 201	Hot water circulation	2
IN 150	Fuel oil transfer	2
MU 32-250 M	Low pressure HI-FOG	2
IN 70	Waste oil transfer	1
MCA 362-200 M	Grey water	1
P 50	Black/grey water transfer	1

SPANISH NAVY

MINEHUNTERS (HULL 209 - 210 - 211 - 212)

SHIPYARD: E.N. BAZAN

YEAR: 1995

For each vessel:

PUMP TYPE	SERVICE	UNITS
IN 15	Oil Transfer	1
IN 100	Transfer	1
IN 10	Fuel Oil D.E-Aleter	3
MU 40-200	Sea Water Fire Fighting	4
MU 50-250LM	Sea Water Circulating	1

POMPE GARBARINO S.p.A.**REFERENCE LIST (NAVY)****SUBMARINE PROJECT S-80 - HULL S 81 - S 82 - S 83 - S 84****SHIPYARD: NAVANTIA****YEAR: 2006**

For each submarine:

PUMP TYPE	SERVICE	UNITS
50G5 VE	Regulating	1
MU 25-160 LM	Hydrophore group	1
AP 40 RA	Drain auxiliary	4
BTA 501	Trim pump	1
AP 40 RA	Auxiliary sea water	2
IN ML 15	Leakages tank draining pump	1
IN ML 50	Diesel oil filtrate transfer	1
MU 65-200 LMS	T.S. Forward transfer pump	2
MU 65-200 VMS	T.S. AFT transfer pump	2
BT 201 V	Distribution pump	1
ACD 025L6 NTBP	Oil pump	2

POLISH NAVY**MINEHUNTER (1 UNIT) KORMORAN II****SHIPYARD: REMONTOWA SHIPBUILDING****YEAR: 2014**

For each vessel:

PUMP TYPE	SERVICE	UNITS
MU 50-200 LMB	Fire	2

PUMP TYPE	SERVICE	UNITS
MU 65-200 LMB	Ships Flushing	2
IN 40	Fuel oil transport	2
IN 50	Dirty Lube Oil transport	1
P 50	Oily bilge water	2
MU 65-250 LMB	Sea water cooling	2
MU 65-250 LMB	AC Cooling	1
BT 291 VB	Provision cooling pump	2
MU 40-250 LMB	AC cooling (F.W.)	1

ALGERIAN NAVY**MINEHUNTER (2 UNIT)****SHIPYARD: INTERMARINE****YEAR: 2014 - 2017**

For each vessel:

PUMP TYPE	SERVICE	UNITS
MU 25-160 M	Thrust bearing and Rubber system cooling	2
IN 70	Lube oil transfer	1
MU 50-200 M	CWUs Sea water cooling	2
MU 50-200 M	CW circulation for HVAC	2
MU 32-200 M	HW circulation for HWAC	2
MU 50-250 M	FireMain	3
MU 65-250 M	Auxiliary system S.W. Cooling	3
BT 301	Cold Fresh water circulation	2
MU 25-200 M	Hot fresh water circulation	2
IN 100	Fuel oil transfer	2

PUMP TYPE	SERVICE	UNITS
BT 313	Antifouling system supply	1
IN 70	Oily water transfer	1
IN 70	Waste oil transfer	1

TAIWAN NAVY

MINEHUNTER (1 UNIT)

SHIPYARD: INTERMARINE

YEAR: 2016

For each vessel:

PUMP TYPE	SERVICE	UNITS
MU 25-160 M	Thrust bearing and Rubber system cooling	2
IN 70	Lube oil transfer	1
MU 50-200 M	CWUs Sea water cooling	2
MU 50-200 M	CW circulation for HVAC	2
MU 32-200 M	HW circulation for HWAC	2
MU 50-250 M	FireMain	3
MU 65-250 M	Auxiliary system S.W. Cooling	3
BT 301	Cold Fresh water cirulation	2
MU 25-200 M	Hot fresh water cirulation	2
IN 100	Fuel oil transfer	2
BT 313	Antifouling system supply	1
IN 70	Oily water transfer	1
IN 70	Waste oil transfer	1