



S P E C I F I C A T I O N

P C H

P U M P S

To enable selection of pumps for introduction into the Navy, the undermentioned information/drawings, spare parts lists, etc. are to be forwarded to the Naval Headquarters for each type of pump. This specification is intended for guidance only. The exact scope of drawings, spares, tools and other information will depend upon the type and make and application of the pump. The following pumps are covered by this specifications:-

- (a) Fire Pumps.
 - (b) Bilge Pumps.
 - (c) Fresh water transfer pump.
 - (d) Diesel transfer pump.
 - (e) Lub oil transfer pump.
 - (f) Gearing Lub Oil Pump.
 - (g) Pumps used as auxiliaries with Evaporators, Air Conditioning and Refrigeration machinery, stabilisers, C.P.P. systems.
 - (h) Any other pumps fitted on board.
2. The questionnaire on each type of the pumps at Appendix 'I' is to be filled up and returned to the Naval Headquarters.
3. Drawings :- One copy each of the drawings listed in Appendix II is to be provided. Dimensions, clearances, tolerances, material specifications, national or international standards, test pressures are to be clearly shown in the drawings.
4. Instructional Handbook and Instructions for Installations:- One copy of these is to be forwarded to the Naval Headquarters for each type of pump.
5. Maintenance and Overhaul :- One copy of the normal maintenance and major overhaul manual is to be supplied. The undermentioned important items must be covered in these manuals :-
- (a) Periodicity of inspection and overhaul.
 - (b) Complete list of spanners, special tools and equipment and required for complete overhaul.

- (c) List of spares required for complete overhaul.
- (d) Schedule of building clearances and tolerances to be adhered to ^{when} carrying out major refitting of the pumps.
- (e) Fault diagnosis chart or procedure for tracing faults is to be supplied.

6. Testing :- Detailed procedure for testing components and the pump as a unit is to be supplied. These instructions should cover:-

- (a) complete list of equipment, instrumentation giving details, type and make of equipment required for testing the pump;
- (b) trial data of the pump as tested in factory is to be supplied.

7. Spare Parts :- The following information on spare gear is to be supplied:-

- (a) Complete list of spare gear to be supplied free of cost, with each type of pump, giving quantities, part. number, etc.
- (b) A copy of the Comprehensive Illustrated parts list for each type of pump giving makers part. numbers, description of item, number fitted per pump, material and corresponding specifications, weight, alternate material etc.
- (c) Complete list of recommended spares for usage of 5000 hours.

8. Performance Curves :- The undersmentioned performance characteristics for each type of pump are to be supplied:-

- (a) Total dynamic head against capacity (litres/min).
- (b) B.H.P. " "
- (c) Manometric Efficiency " "

(Corresponding pump speed to be stated)

COMBINATION CH PUMPS

1. Make:
2. Type :
3. Purpose for which used :
4. Capacity (i) _____ Tons/hr @ _____ meters head.
(ii) _____ Tons/hr @ _____ meters head.
Specific gravity of liquid. _____
5. Duty Speed (i)
(ii)
6. Duty Horse Power :
7. B.H.P. of prime mover :
8. Is it a Vertical or Horizontal Pump :
9. Is the pump self priming :
10. Max Suction Lift :
11. DIMENSIONS :
Length :
Breadth :
Height :
Suction bore and flange dimensions :
Discharge bore and flange dimensions :
12. Weights : (i) Pump (Dry)
Pump (wet)
(ii) Prime Power
13. Ability to with-stand shock loading
Upwards : g
Downwards : g
Horizontal : g

14. Type of Mountings or (hook -
Type) Mountings :

(A sketch to be attached)

15. Instrumentation :

Type/make and description :

- a) Tachometer.
- b) Pressure gauges.
- c) Thermometers.

16. Safety Devices fitted :

- (i) Over-speed Trip set at
- (ii) Auto cut in
- (iii) Any other

17. Ball Bearings (Type and make).

	<u>Position</u>	<u>Fitted</u>	<u>Alternative</u>
(i)			
(ii)			

18. Materials of Principal Bearing Parts :

	<u>Item</u>	<u>Material</u>	<u>Specification</u>	<u>Alternate Specification</u>
(i)	Spindle sleeve.			
(ii)	Impeller bearing rings.			
(iii)	Bearing bushes.			
(iv)	Impeller.			
(v)	Other parts as considered necessary.			

19. Gland Packings - Recommended.

	<u>Where used</u>	<u>Size</u>	<u>Type and make.</u>
(i)			
(ii)			
(iii)			

	<u>Where used</u>	<u>Size</u>	<u>Type and make</u>
(iv)			
(v)			

20. Jointing Material :

	<u>Where used</u>	<u>Material</u>
(i)		
(ii)		
(iii)		
(iv)		

21. Lubricating Oil and Greases :

- (i) Type/Grade.
- (ii) Make.
- (iii) Specification.
- (iv) International Standard.
- (v) Commercial Equivalent.

22. Relief Valves set to lift at

23. Prime Movers :

- (i) Type.
- (ii) Make.
- (iii) B.H.P.
- (iv) Speed.
- (v) Weight.
- (vi) Dimensions.
- (vii) Power Supply.
- (viii) Min. Starting torque.

DRAWINGS

1. Arrangement drawing of the pump.
2. Sectional arrangement of the pump.
3. Impeller.
4. Rotating Assembly and Bearings.
5. Casing.
6. Glands.
7. Suction Strainer.
8. Relief Valves.
9. Governor (if fitted).
10. Instrumentation.
11. Suction Strainer.
12. Air Separator (if fitted).
13. Roller Bearings (if fitted).
14. Lubricators.
15. Thrust Bearing.
16. Other parts as applicable.