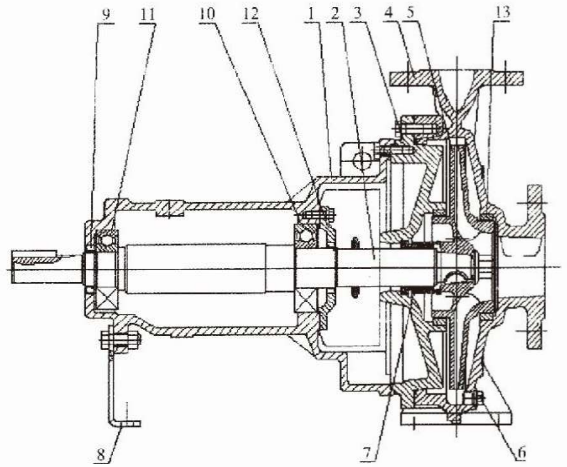


Remark:The drawing is a sketch. pumps of series 4 are without rear wear ring.

Ref No	Description	Standard Materials	Ref No	Description	Standard Materials
1	Bearing Housing	Cast Iron	8	Support Foot	Mild Steel
2	Shaft	SS420	9	Oil Seal	Nitrile Rubber
3	Backplate	Cast Iron	10	Bearing - Impeller End	NSK Ball Bearing
4	Pump Casing	Cast Iron	11	Bearing - Driver End	NSK Ball Bearing
5	Impeller	SS 304	12	Bearing Cover	Cast Iron
6	Drain Plug	Malleable Steel	13	Wear Ring	S20910
7	Mechanical Seal	John Crane Type 21 - Carbon/Ceramic/Nitrile			

3. Installation, Operation & Maintenance

Installation:

1. Prior to the installation of the pump unit, check that the details of the packing list match against those on the order and against the data printed on the pump nameplate.
2. Mounting Location: The pump unit should be installed nearest to the source of the liquid, utilizing the least suction lift and the shortest length of suction pipe. Preferred installation practice is covered and protected from the environment.

⚠ **Caution** **Please ensure both the pump and motor are at least 150mm clear of obstructions and that adequate air supply reaches the motor cooling fan.**

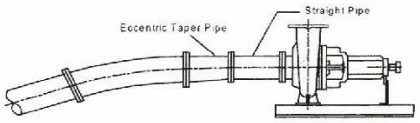
3. Mounting Foundation: Set the pump unit on a firm foundation. The foundation should be sufficiently substantial to support the pump and drive unit.
4. Coupling Arrangement: **(Not applicable to close coupled or belt driven pumps)* The following is intended as a guide only for the correct selection of the appropriate coupling.
   - The type of Pump: In this case Centrifugal.
   - The type of drive: Electric, Diesel, Petrol or other.
   - The maximum output power/shaft power of the drive.
   - The maximum speed of the drive.
   - Duty type: Continuous or intermittent
   - Shaft diameter & key size of pump & drive
   - **Shaft Alignment: Refer to coupling manufacturers specifications.*

⚠ **Caution** **Please ensure appropriate guards are fitted to all exposed rotating equipment prior to operation.**

5. Inlet and Outlet pipe work: All pipe work should be correctly aligned with the pump and firmly supported so that no external loads are imposed on the pump. The pump shaft must be free to turn after the pump has been bolted in position and pipe work connected.

Suction pipeline:

Suction piping must be free from air leaks. Suction piping should be the same size or larger than that of the pump suction flange. Tapered eccentric reducer should be used *when using larger diameter pipe work (refer to below drawing).*
The pump should be fitted with a straight pipe of



length not less than 3 times the pipe diameter. Ensure that the end of the suction line is sufficiently below the lowest level of the liquid to prevent the formation of vortexing, and the consequent entry of air into the suction pipe. Where there is suction lift, it is essential that a reputable foot valve with a water opening of at least equal to that of the pipe, is used.

⚠ **Caution** **The suction pipeline should have a continual fall from pump to liquid source to prevent air pockets.**

Discharge pipeline:

It is recommended that a non-return valve is fitted to the pumps discharge. The installation of a gate valve after the non-return valve is beneficial to aid in priming of the pump, trimming of the discharge flow and maintenance on the non return valve *(refer to following drawing).* Discharge pipeline should be selected of a size suitable to carry the required capacity, such that the friction head created is not excessive. When the pipeline is laid over undulating ground with high points where air pockets can form, vent cocks must be placed to expel the accumulation of air, which may affect the discharge capacity of the pump.