

General information

Sheet 3

Sheet 5

Limits of axial and radial loads acting on hydraulic machine shaft

Parameters	Typical size of hydraulic machine T						
	12	28	(55) 56	80	(107) 112	160	250
A, mm	20	20	25	25	27,5	27,5	29
F _{max} , N	2748	5361	8962	11657	13610	18317	23924
F / p, N / MPa	61	119	199	291	302	452	590
F _{ax max} , H	200	315	500	710	900	1120	1600
F _{ax max} / p, N / MPa	26	46	75	96	103	151	196

a - distance of force F application point from the shaft collar

F_{max} - maximal radial load at optimal gear mounting angle

F / p - radial load acting at pressure p

(additional load, allowable at pressure p)

±F_{ax max} - maximum allowable axial load in stationary state

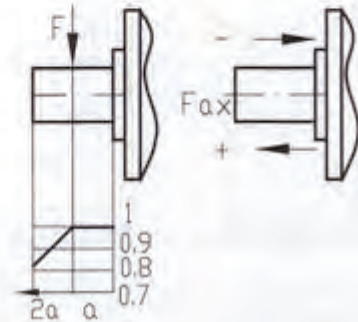
±F_{ax} / p - maximum allowable axial load when operating at pressure p

Direction of the maximum allowable axial load should be taken into account:

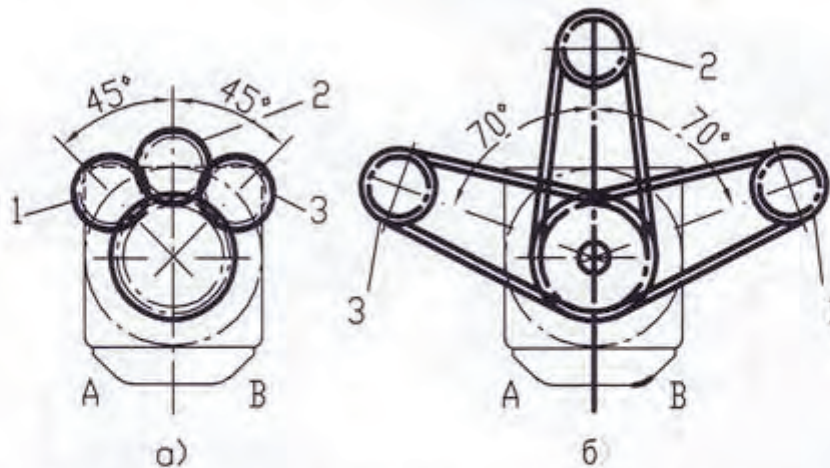
-F_{ax max} - wear resistance of bearings increases

+F_{ax max} - wear resistance of bearings decreases (avoid such a situation as far as possible)

Values of limit load on hydraulic machine shaft are given for optimum angles of gear transmission (a) and V-belt transmission (b).



Selection diagram for optimal mounting angle in case of gear transmission (a) and V-belt transmission (b)



1 - for a pump with clockwise rotation or hydraulic motor with counterclockwise rotation (under pressure – inlet channel B).

2 – or reversible drive

3 – for a pump with counterclockwise rotation or hydraulic motor with clockwise rotation (under pressure – inlet channel A)

Note: A ±45° deviation from the optimal gear transmission mounting angle is permissible. Another arrangement should be agreed with the manufacturer.