

FLANGE LOADING :

Total hydrostatic end force	$H' = \pi / 4 * G^2 P =$	138977 N
Hydrostatic end force on area inside of flange	$H'_D = \pi / 4 * B^2 P =$	111733 N
Total joint contact surface compression load	$H'_P = 2 b \pi G m P =$	74688 N
Difference b/w tot. hydrostatic end force and hydrostatic end force in flange	$H'_T = H' - H'_D =$	27244 N
Total hydrostatic end force incl. external load effect	$H = \pi / 4 * G^2 P_t =$	327769 N
Hydrostatic end force on area inside of flange incl. external load effect	$H_D = \pi / 4 * B^2 P_t =$	263515 N
Total joint contact surface compression load incl. external load effect	$H_P = 2 b \pi G m P_t =$	176147 N
Difference b/w tot. hydrostatic end force and hydrostatic end force in flange	$H_T = H - H_D =$	64254 N
Required bolt force for operating load and external load conditions:	$W_{m1} = H + H_P =$	503916 N
Any additional AF applied to the flange b/w initial bolt-up and commencement of operation	$F_{egs} =$	0 N
Any additional BM applied to the flange b/w initial bolt-up and commencement of operation	$M_{egs} =$	0 Nmm
Required total bolt force for gasket seating conditions:	$W_{m2} = \pi b G y + F_{egs} + 4 M_{egs} / G =$	627840 N