Pot Bearing design calculations.         in KN in kips         Dead Load PD       900       202.33         Live Load PL       300       67.44         Lateral Load HT       150       33.72         Rotation       θu       0.02         To convert KN to kips / 4.44822         To calculate Diameter of the pot         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Imm       A       48000         T       15278.87       123.6077         Dp       247.2155       248	Dead Load PD Live Load PL Lateral Load HT	in KN 900 300 150 0.02	202.33 67.44			
Dead Load       PD       900       202.33         Live Load       PL       300       67.44         Lateral Load       HT       150       33.72         Rotation $\thetau$ 0.02       To convert KN to kips / 4.44822         To calculate Diameter of the pot       The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.       in mm	Live Load PL Lateral Load HT	900 300 150 0.02	202.33 67.44			
Dead Load       PD       900       202.33         Live Load       PL       300       67.44         Lateral Load       HT       150       33.72         Rotation $\thetau$ 0.02       To convert KN to kips / 4.44822         To calculate Diameter of the pot       The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.       in mm          A       48000         T       15278.87         [123.6077]       Dp          Dp	Live Load PL Lateral Load HT	900 300 150 0.02	202.33 67.44			
Live Load       PL       300       67.44         Lateral Load       HT       150       33.72         Rotation $\theta$ u       0.02       0.02         To convert KN to kips / 4.44822         To calculate Diameter of the pot         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         In mm         A       48000         T       15278.87         123.6077       Dp         Dp       247.2155	Live Load PL Lateral Load HT	300 150 0.02	67.44			
Lateral Load HT       150       33.72         Rotation       0.02         To convert KN to kips / 4.44822         To calculate Diameter of the pot         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Stress of the pot and the pot and the pad at the maximum load.         Image: Stress of the pot and the pad at the pot and the pot and the pad at the pot and the pad at the pot and the	Lateral Load HT	150 0.02			Results	
Rotation       θu       0.02         To convert KN to kips /       4.44822         To calculate Diameter of the pot       4.44822         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.       in mm          A       48000         T       15278.87          Dp       247.2155		0.02		1		
To convert KN to kips /       4.44822         To calculate Diameter of the pot         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Imm         A       48000         T       15278.87         123.6077         Dp       247.2155						
To calculate Diameter of the pot         The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load.         Image: Image				<u>.</u>		
The diameter of the pot and the elastomeric pad are determined by the maximum stress, 25MPa (3.5 ksai) permitted on the pad at the maximum load. A 48000 T 15278.87 123.6077 Dp 247.2155		To convert	KN to kips /	4.44822		
25MPa (3.5 ksai) permitted on the pad at the maximum load.  In mm A 48000 T 15278.87 123.6077 Dp 247.2155	To calculate Diameter of the pot					
25MPa (3.5 ksai) permitted on the pad at the maximum load.  In mm A 48000 T 15278.87 123.6077 Dp 247.2155	The diameter of the not and the elast	tomoric nad	are determ	ined by the	maximum strass	
in mm         A       48000         T       15278.87         123.6077         Dp       247.2155	•	-		-		
T 15278.87 123.6077 Dp 247.2155					in mm	
123.6077 Dp 247.2155				Α	48000	
123.6077 Dp 247.2155		-				
Dp 247.2155				т	15278.87	
Dp 247.2155					123 6077	
				_		
Pad Diameter   Roundup   248				Dp	247.2155	
	Pad Diameter		Roundup	I	248	
To calculate Elastomer thickness	To calculate Elastomer thickness					
The thickness of the pad is determined by the strain in the elastomeric pad	The thickness of the nad is determine	ed by the st	rain in the e	lastomeric	nad	
	The thickness of the pauls determine	cu by the st				
tr $\ge$ 3.33* $\theta_{u}$ *Dp 16.5168	tr <u>&gt;</u> 3.33*θu ∗Dp				16.5168	
17					17	
To calculate Piston Sealing rings width <b>brings</b> , and thickness <b>rings</b>	To calculate Piston Sealing rings width	n <b>b<i>rin</i>gs,</b> ar	nd thickness	rings		
( Ring should be flat and manufactured out of of ptfe or brass)						
$brings = \geq \max(0.02Dp)$	b <i>rings</i> = <u>&gt;</u> max (0.02Dp)	,			4.96	
(width) Roundup 5	(width)		Roundup		5	
	Maria a O Othara			-		
rings= ≥0.2*brings 1 (thickness)	• – -				1	
Roundup 1	. ,		Roundup	I	1	
Total thickness of rings Rings 3	Total thickness of rings Rings	3			3	

Calculations : ARP - Dubai

To calculate Piston thickness			
The piston should have a minimum thickness of <b>tpist &gt; 0.0</b>	)6 Dn		
	/0 Dp	14.88	
Percentage constant 0.06		14.00	
Roundup		15	
	_		
The minimum thickness of the rim of Piston <b>trim</b> , is			
trim <u>&gt;</u>		4.38	
Fy =yield strength of steel         345         Roundup		5.00	
To calculate Pot wall thickness			
Pot wall thickness is calculated based on Eqs. 1 and Eqs 2			
Tot wan thiothess is calculated based on Eqs. 1 and Eqs.2			
Eqs - 1 for Vertical load			
tw ≥		19.84	
σu = *(Dp)		12320	
(= )/			
Øt = resistance factor for tension (0.9) 0.9			
Eqs - 2 for Horizontal load load			
tw <u>&gt;</u> 539.130	43	23.22	
L			
62Constant			
	Eqs-1	NO	
There for Pot wall thickness to be considered to be	Eqs-2	ОК	
<u>To calculate pot base thickness (minimum)</u>			
Pot base thickness <b>t</b> <i>base</i> ≥ 0.06 <b>D</b> p ≤ <b>t</b> w	t base	14.88	ОК
	Dp	19.84	OK
Results.			
<ol> <li>Minimum diameter of the Pot</li> <li>Minimum thickness of the elastomer Pad</li> </ol>	248		
3. Thickness of Piston	17 15		
4. Minimum thickness of piston	5.00		
5. Base size minimum	353.33		
6. Minimum top size	406.32		
7. Pot wall thickness	23.22		
8. Top plate thickness		14.88	
8. Pot base thickness		19.84	

Calculations : ARP - Dubai