

HPP20-工程塑料轴承 Plastic Plain Bearings

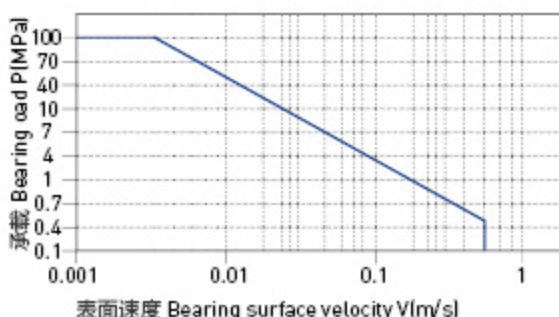
轴承PV值 PV Value

HPP20塑料轴承最大运行PV值为 $0.28\text{N/mm}^2 \times \text{m/s}$;由此决定轴承所承受的载荷与速度成反比, 详情查阅图表HPP20-1。

The max PV value of the HPP20 series bearing is $0.28\text{N/mm}^2 \times \text{m/s}$ which determines the load capacity of bearing is inversely proportional to the speed. Please refer to the chart for more detailed information (Graph HPP20-1).

图表 HPP20-1: PV 图表

Graph HPP20-1: Permissible PV value for HPP20



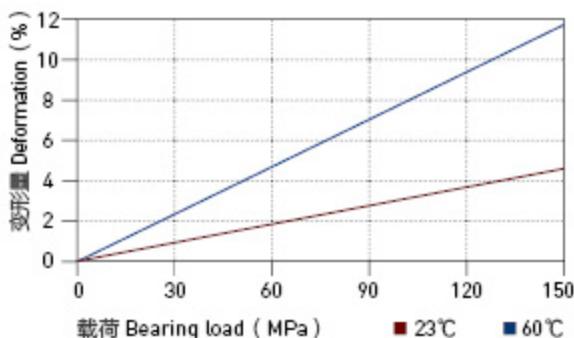
轴承的载荷、速度、温度 Load, Speed And Temperature

HPP20塑料轴承可承受最大静载荷为120Mpa, 在此载荷下轴承的最大压缩变形量参考图表HPP20-2; 轴承实际工作载荷小于120Mpa, 载荷还受到运行速度以及温度的影响, 速度越快 (Vmax: 0.6m/s)会导致摩擦温度上升, 而温度上升 (Tmax: 250℃)会导致轴承的承载能力逐渐减弱, 载荷随轴承工作温度变化情况参考图表HPP20-3。

HPP20 allows the max static load of 120Mpa, The max compressive deformation rate under the max load is listed in Graph HPP20-2; The actual load capacity of bearing is slightly less than 120Mpa, The bearing load is variable against the speed and temperature, Fast speed (Vmax: 0.6m/s) results into higher temperature (Tmax: 250℃) which decreases the load capacity of the bearing. Please refer to the Graph HPP20-3 for such variation.

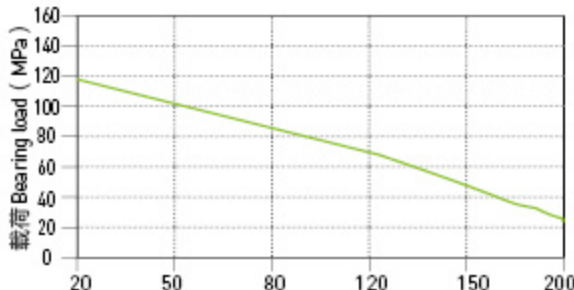
图表 HPP20-2: 载荷 - 温度 - 变形量图表

Graph HPP20-2: Load-Temperature deformation



图表 HPP20-3: 载荷 - 温度图表

Graph HPP20-3: Load-Temperature diagrams



HPP20-工程塑料轴承 Plastic Plain Bearings

轴承的摩擦系数、磨损、轴材料 Friction Factor, Wear And Shaft Material

■ 轴承的摩擦系数 Friction factor

图表HPP20-4表明HPP20轴承的摩擦系数在载荷一定时随着运行速度的增加而逐渐升高；图表HPP20-5表明HPP20轴承在速度一定载荷在20Mpa以内时摩擦系数会随着载荷的逐步增加而快速降低，而当载荷高于20Mpa时摩擦系数的变化却比较平缓。图表HPP20-6表明HPP20轴承比较适合轴的轴表面粗糙度为Ra0.4 - 0.9 μ m。

HPP20 Bearing Friction factor is increased along with the increasing of the operation speed under certain loading (See Graph HPP20-4). The friction factor of HPP20 is decreased along with the loading increasing not over 20Mpa (see Graph HPP20-5). The friction factor will not change much along with the speed when the loading is over 20Mpa. The Graph HPP20-6 shows that the bearing could achieve its best performance when the counter shaft surface roughness is around Ra0.4 to Ra0.9.

HPP20	干运行 Dry	油脂 Grease	油 Oil	水 Water
摩擦系数 μ Friction coef.	0.25-0.40	0.09	0.04	0.04

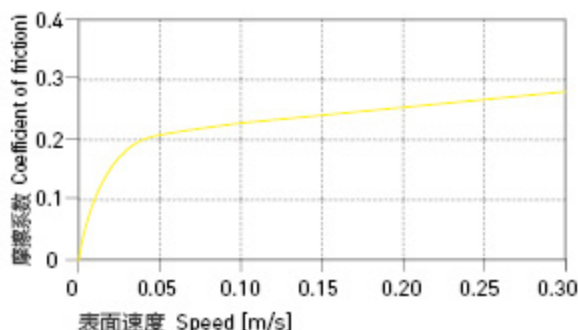
■ 磨损与轴材料 Wearing and shaft material

图表HPP20-7和图表HPP20-8测试表明了HPP20轴承在不同轴材料上的运行磨损情况，这表明此轴承在轻载下使用硬化铝轴和硬铬轴比较适合，而随着载荷的增加硬铬轴的优势尤为突出。图表HPP20-7表明HPP20轴承比较适合用于摆动运动；同样值得注意的是图表HPP20-8表明HPP20轴承在常温23℃下的摩擦磨损性能并没有在高温150℃下优秀。

Graph HPP20-7 and Graph HPP20-8 show the test results of the material HPP20 running against different shaft materials. It is suitable for hard Aluminum and hard chrome steel shaft. The hard chrome steel shaft will be better when the loading is getting heavier. Graph HPP20-7 shows HPP20 is good for oscillation operation. Specially, from the Graph HPP20-8, it is read that HPP20 is with better performance under high temperature around 150℃ comparing with under the ambient temperature of 23℃.

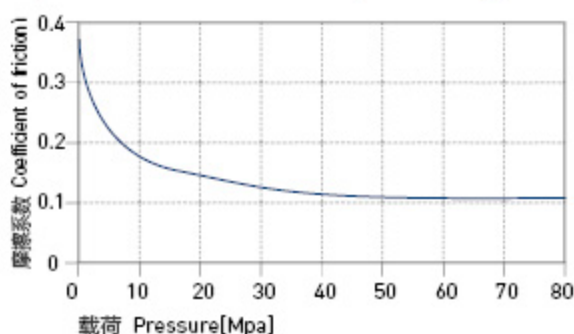
图表 HPP20-4: 摩擦系数与速度变化关系图表 P=2MPa

Graph HPP20-4: Coefficient of friction & the speed of bearing, P=2MPa



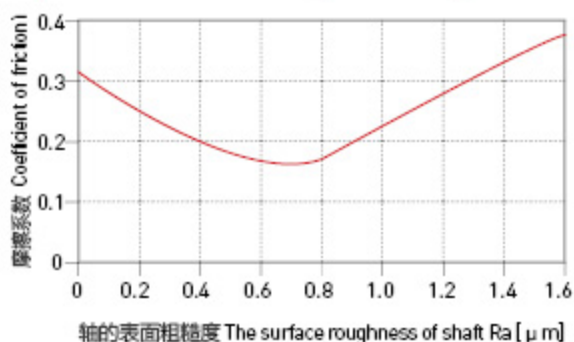
图表 HPP20-5: 摩擦系数与载荷变化关系图表 v=0.2m/s

Graph HPP20-5: Coefficient of friction & the pressure of bearing, v=0.2m/s



图表 HPP20-6: 摩擦系数与轴表面粗糙度关系图表

Graph HPP20-6: Coefficient of friction & the surface roughness of shaft



HPP20-工程塑料轴承 Plastic Plain Bearings

轴承的摩擦系数、磨损、轴材料 Friction Factor, Wear And Shaft Material

■ 化学抗性 Chemical Resistance

HPP20 塑料轴承具有极好的化学性质，能抵抗浓度 65% 的强酸。

Chemical Resistance of HPP20 is very good. It can work well in the heavy acid of 65%.

■ 吸水性 Water Absorbability

在标准大气压中，HPP20 塑料轴承的吸水率为 0.1%，浸泡水中最大平衡吸水率为 0.5%；因此材料不会吸水而发生性能及尺寸变化，适用于潮湿环境。

The water absorb rate of HPP20 is less than 0.1% under the atmospheric pressure while it is 0.5% when the material is immersed into water. The material performance and dimensions of the material is stabilized for the applications under humid environment.

■ 抗UV性能 UV Resistance

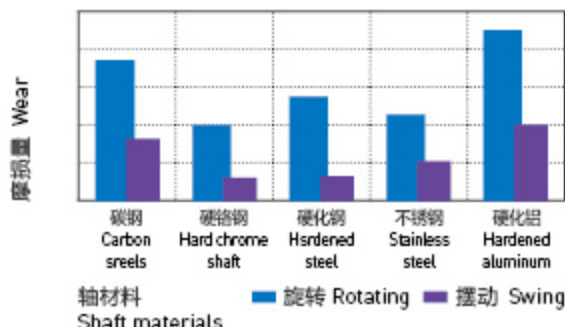
HPP20 长久暴露在紫外线下材料性能不会发生改变。
HPP20 can maintain its performance to be stable even exposed in the UV ray for long period.

■ 安装公差 Installation Tolerances

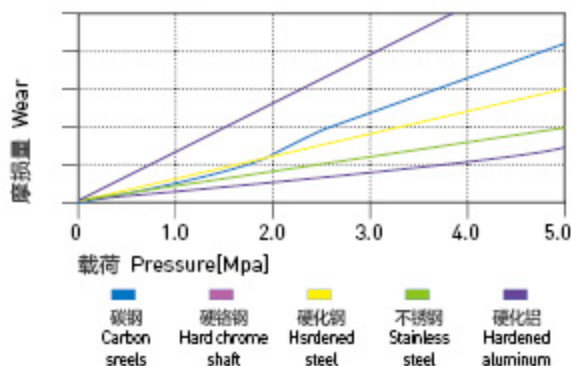
HPP20 塑料轴承压装后公差 Tolerances after pressfit

直径 Di. [mm]	HPP20 E10 [mm]	座孔 Housing H7 [mm]	轴 Shaft h9 [mm]
> 0~3	+0.014~+0.054	0~+0.010	0~-0.025
> 3~6	+0.020~+0.068	0~+0.012	0~-0.030
> 6~10	+0.025~+0.083	0~+0.015	0~-0.036
> 10~18	+0.032~+0.102	0~+0.018	0~-0.043
> 18~30	+0.040~+0.124	0~+0.021	0~-0.052
> 30~50	+0.050~+0.150	0~+0.025	0~-0.062
> 50~80	+0.060~+0.180	0~+0.030	0~-0.074
> 80~120	+0.072~+0.212	0~+0.035	0~-0.087
> 120~180	+0.085~+0.245	0~+0.040	0~-0.100

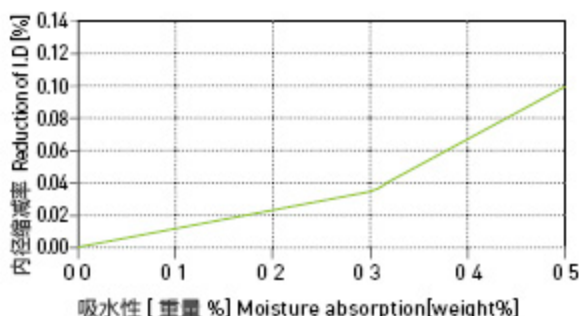
图表 HPP20-7: 在不同轴材料上旋转时的磨损量 $P=2\text{MPa}$, $v=0.2\text{m/s}$
Graph HPP20-7: The bearing wear under rotating with different shaft materials, $p=2\text{MPa}$, $v=0.2\text{m/s}$



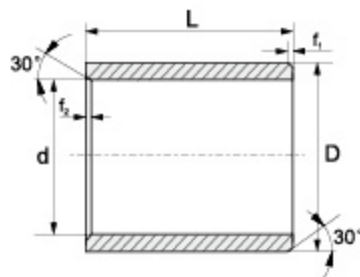
图表 HPP20-8: 旋转磨损随轴材料与压力变化关系 $v=0.2\text{m/s}$
Graph HPP20-8: The bearing wear & pressure under rotating with different shaft materials, $v=0.2\text{m/s}$



图表 HPP20-9: 吸水性的影响
Graph HPP20-9: Effect of moisture absorption on HPP20 bearings



HPP20标准规格Standard 直套Metric Cylindrical Bushings



推荐安装公差 Recommend fitting tolerance:

座孔 Housing: H7

轴 Shaft: h9

订购编码 Order P/N:

HPP20-0304-03

材料 Material

d	f ₁	f ₂
1-6	0.3	0.5
6-12	0.5	
12-30	0.8	
>30	1.2	

订购编码 Order PN	d [mm]	d- 公差 After fitting [mm]	D [mm]	L(h13) [mm]
HPP20-0203-03	2	+0.014/+0.054	3.5	3
HPP20-0304-03	3	+0.014/+0.054	4.5	3
HPP20-0304-05	3	+0.014/+0.054	4.5	5
HPP20-0304-06	3	+0.014/+0.054	4.5	6
HPP20-0405-04	4	+0.02/+0.068	5.5	4
HPP20-0405-06	4	+0.02/+0.068	5.5	6
HPP20-0506-05S	5	+0.01/+0.04	6	5
HPP20-0507-05	5	+0.02/+0.068	7	5
HPP20-0507-08	5	+0.02/+0.068	7	8
HPP20-0507-10	5	+0.02/+0.068	7	10
HPP20-0608-04	6	+0.02/+0.068	8	4
HPP20-0608-05	6	+0.02/+0.068	8	5
HPP20-0608-06	6	+0.02/+0.068	8	6
HPP20-0608-08	6	+0.02/+0.068	8	8
HPP20-0608-09	6	+0.02/+0.068	8	9
HPP20-0608-10	6	+0.02/+0.068	8	10
HPP20-0608-11	6	+0.02/+0.068	8	11
HPP20-0810-05	8	+0.025/+0.083	10	5
HPP20-0810-06	8	+0.025/+0.083	10	6
HPP20-0810-07	8	+0.025/+0.083	10	7
HPP20-0810-08	8	+0.025/+0.083	10	8
HPP20-0810-10	8	+0.025/+0.083	10	10
HPP20-0810-12	8	+0.025/+0.083	10	12
HPP20-0810-13	8	+0.025/+0.083	10	13
HPP20-0810-15	8	+0.025/+0.083	10	15
HPP20-0810-21	8	+0.025/+0.083	10	21
HPP20-1011-06	10	+0.025/+0.083	11	6
HPP20-1012-04	10	+0.025/+0.083	12	4
HPP20-1012-05	10	+0.025/+0.083	12	5
HPP20-1012-06	10	+0.025/+0.083	12	6
HPP20-1012-07	10	+0.025/+0.083	12	7
HPP20-1012-08	10	+0.025/+0.083	12	8
HPP20-1012-09	10	+0.025/+0.083	12	9
HPP20-1012-10	10	+0.025/+0.083	12	10
HPP20-1012-12	10	+0.025/+0.083	12	12
HPP20-1012-14	10	+0.025/+0.083	12	14

订购编码 Order PN	d [mm]	d- 公差 After fitting [mm]	D [mm]	L(h13) [mm]
HPP20-1012-15	10	+0.025/+0.083	12	15
HPP20-1012-17	10	+0.025/+0.083	12	17
HPP20-1012-20	10	+0.025/+0.083	12	20
HPP20-1213-12S	12	+0.016/+0.059	13	12
HPP20-1214-04	12	+0.032/+0.102	14	4
HPP20-1214-06	12	+0.032/+0.102	14	6
HPP20-1214-08	12	+0.032/+0.102	14	8
HPP20-1214-10	12	+0.032/+0.102	14	10
HPP20-1214-12	12	+0.032/+0.102	14	12
HPP20-1214-14	12	+0.032/+0.102	14	14
HPP20-1214-15	12	+0.032/+0.102	14	15
HPP20-1214-20	12	+0.032/+0.102	14	20
HPP20-1214-25	12	+0.032/+0.102	14	25
HPP20-1315-15	13	+0.032/+0.102	15	15
HPP20-1315-25	13	+0.032/+0.102	15	25
HPP20-1416-03	14	+0.032/+0.102	16	3
HPP20-1416-08	14	+0.032/+0.102	16	8
HPP20-1416-10	14	+0.032/+0.102	16	10
HPP20-1416-15	14	+0.032/+0.102	16	15
HPP20-1416-20	14	+0.032/+0.102	16	20
HPP20-1416-25	14	+0.032/+0.102	16	25
HPP20-1517-10	15	+0.032/+0.102	17	10
HPP20-1517-12	15	+0.032/+0.102	17	12
HPP20-1517-15	15	+0.032/+0.102	17	15
HPP20-1517-20	15	+0.032/+0.102	17	20
HPP20-1517-25	15	+0.032/+0.102	17	25
HPP20-1618-10	16	+0.032/+0.102	18	10
HPP20-1618-12	16	+0.032/+0.102	18	12
HPP20-1618-15	16	+0.032/+0.102	18	is
HPP20-1618-20	16	+0.032/+0.102	18	20
HPP20-1618-25	16	+0.032/+0.102	18	25
HPP20-1618-30	16	+0.032/+0.102	18	30
HPP20-1820-10	18	+0.032/+0.102	20	10
HPP20-1820-12	18	+0.032/+0.102	20	12
HPP20-1820-15	18	+0.032/+0.102	20	15
HPP20-1820-20	18	+0.0321/+0.102	20	20

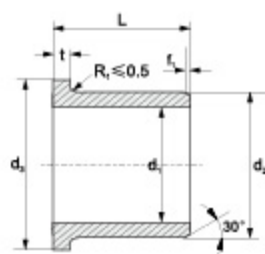
订购编码 Order PN	d [mm]	d- 公差 After fitting [mm]	D [mm]	L(h13) [mm]
HPP20-1820-25	18	+0.032/+0.102	20	25
HPP20-2022-20	20	+0.04/+0.124	22	20
HPP20-2022-30	20	+0.04/+0.124	22	30
HPP20-2023-10	20	+0.04/+0.124	23	10
HPP20-2023-15	20	+0.04/+0.124	23	15
HPP20-2023-20	20	+0.04/+0.124	23	20
HPP20-2023-25	20	+0.04/+0.124	23	25
HPP20-2023-30	20	+0.04/+0.124	23	30
HPP20-2225-15	22	+0.04/+0.124	25	15
HPP20-2225-20	22	+0.04/+0.124	25	20
HPP20-2225-25	22	+0.04/+0.124	25	25
HPP20-2225-30	22	+0.04/+0.124	25	30
HPP20-2528-12	25	+0.04/+0.124	28	12
HPP20-2528-15	25	+0.04/+0.124	28	15
HPP20-2528-20	25	+0.04/+0.124	28	20
HPP20-2528-24	25	+0.04/+0.124	28	24
HPP20-2528-25	25	+0.04/+0.124	28	25
HPP20-2528-30	25	+0.04/+0.124	28	30
HPP20-2528-35	25	+0.04/+0.124	28	35
HPP20-2832-30	28	+0.04/+0.124	32	30
HPP20-3034-15	30	+0.04/+0.124	34	15
HPP20-3034-20	30	+0.04/+0.124	34	20
HPP20-3034-24	30	+0.04/+0.124	34	24
HPP20-3034-25	30	+0.04/+0.124	34	25
HPP20-3034-30	30	+0.04/+0.124	34	30
HPP20-3034-35	30	+0.04/+0.124	34	35
HPP20-3034-40	30	+0.04/+0.124	34	40
HPP20-3236-30	32	+0.05/+0.15	36	30
HPP20-3236-40	32	+0.05/+0.15	36	40
HPP20-3539-14	35	+0.05/+0.15	39	14
HPP20-3539-20	35	+0.05/+0.15	39	20
HPP20-3539-25	35	+0.05/+0.15	39	25
HPP20-3539-30	35	+0.05/+0.15	39	30

订购编码 Order PN	d [mm]	d- 公差 After fitting [mm]	D [mm]	L(h13) [mm]
HPP20-3539-40	35	+0.05/+0.15	39	40
HPP20-3539-50	35	+0.05/+0.15	39	50
HPP20-3640-20	36	+0.05/+0.15	40	20
HPP20-4044-10	40	+0.05/+0.15	44	10
HPP20-4044-16	40	+0.05/+0.15	44	16
HPP20-4044-20	40	+0.05/+0.15	44	20
HPP20-4044-30	40	+0.05/+0.15	44	30
HPP20-4044-40	40	+0.05/+0.15	44	40
HPP20-4044-50	40	+0.05/+0.15	44	50
HPP20-4246-40	42	+0.05/+0.15	46	40
HPP20-4246-50	42	+0.05/+0.15	46	50
HPP20-4550-40	45	+0.05/+0.15	50	40
HPP20-4550-50	45	+0.05/+0.15	50	50
HPP20-5055-20	50	+0.05/+0.15	55	20
HPP20-5055-30	50	+0.05/+0.15	55	30
HPP20-5055-40	50	+0.05/+0.15	55	40
HPP20-5055-50	50	+0.05/+0.15	55	50
HPP20-5560-20	55	+0.06/+0.18	60	20
HPP20-5560-26	55	+0.06/+0.18	60	26
HPP20-5560-40	55	+0.06/+0.18	60	40
HPP20-5560-50	55	+0.06/+0.18	60	50
HPP20-5560-60	55	+0.06/+0.18	60	60
HPP20-6065-30	60	+0.06/+0.18	65	30
HPP20-6065-40	60	+0.06/+0.18	65	40
HPP20-6065-50	60	+0.06/+0.18	65	50
HPP20-6065-60	60	+0.06/+0.18	65	60
HPP20-6570-50	65	+0.06/+0.18	70	50
HPP20-7075-60	70	+0.06/+0.18	75	60
HPP20-7580-40	75	+0.06/+0.18	80	40
HPP20-115121-90	115	+0.072/+0.212	121	90
HPP20-120125-100	120	+0.072/+0.212	125	100

*d 公差为压入标准 H7 座孔 (ISO3547-1) 后公差

*Tolerance d: after being pressed into housing H7(ISO3547-1)

翻边轴套 Metric Flange Bushings



推荐安装公差 Recommend fitting tolerance:

座孔 Housing: H7

轴 Shaft: h9

订购编码 Order P/N:

HPP20 E-0304-03

 翻边轴套 Flange bushes
 材料 Material

d	f
1-6	0.3
6-12	0.5
12-30	0.8
>30	1.2

订购编号 Order PN	d ₁ [mm]	d ₁ -公差 After fitting [mm]	d ₂ [mm]	d ₂ [d13] [mm]	L[h13] [mm]	t _{0.12} [mm]
HPP20F-0304-03	3	+0.014/+0.054	4.5	7.5	3	0.75
HPP20F-0304-05	3	+0.014/+0.054	4.5	7.5	5	0.75
HPP20F-0405-03	4	+0.02/+0.068	5.5	9.5	3	0.75
HPP20F-0405-04	4	+0.02/+0.068	5.5	9.5	4	0.75
HPP20F-0405-06	4	+0.02/+0.068	5.5	9.5	6	0.75
HPP20F-0506-3.5S	5	+0.01/+0.04	6	10	3.5	0.5
HPP20F-0506-05S	5	+0.01/+0.04	6	10	5	0.5
HPP20F-050614-06S	5	+0.01/+0.04	6	14	6	0.5
HPP20F-0507-03	5	+0.02/+0.068	7	11	3	1
HPP20F-0507-04	5	+0.02/+0.068	7	11	4	1
HPP20F-0507-05	5	+0.02/+0.068	7	11	5	1
HPP20F-0507-07	5	+0.02/+0.068	7	11	7	1
HPP20F-0607-10	6	+0.01/+0.04	7	11	10	0.5
HPP20F-0608-04	6	+0.02/+0.068	8	12	4	1
HPP20F-0608-05	6	+0.02/+0.068	8	12	5	1
HPP20F-0608-06	6	+0.02/+0.068	8	12	6	1
HPP20F-0608-07	6	+0.02/+0.068	8	12	7	1
HPP20F-0608-08	6	+0.02/+0.068	8	12	8	1
HPP20F-0608-10	6	+0.02/+0.068	8	12	10	1
HPP20F-0708-08S	7	+0.013/+0.049	8	12	8	0.5
HPP20F-0809-12	8	+0.013/+0.049	9	13	12	0.5
HPP20F-0810-04	8	+0.025/+0.083	10	15	4	1
HPP20F-0810-05	8	+0.025/+0.083	10	15	5	1
HPP20F-0810-07	8	+0.025/+0.083	10	15	7	1
HPP20F-0810-09	8	+0.025/+0.083	10	15	9	1
HPP20F-0810-10	8	+0.025/+0.083	10	15	10	1
HPP20F-0810-15	8	+0.025/+0.083	10	15	15	1
HPP20F-0810-30	8	+0.025/+0.083	10	15	30	1
HPP20F-1012-04	10	+0.025/+0.083	12	18	4	1
HPP20F-1012-05	10	+0.025/+0.083	12	18	5	1
HPP20F-1012-06	10	+0.025/+0.083	12	18	6	1
HPP20F-1012-07	10	+0.025/+0.083	12	18	7	1
HPP20F-1012-09	10	+0.025/+0.083	12	18	9	1
HPP20F-1012-10	10	+0.025/+0.083	12	18	10	1
HPP20F-1012-12	10	+0.025/+0.083	12	18	12	1
HPP20F-1012-15	10	+0.025/+0.083	12	18	15	1
HPP20F-1012-17	10	+0.025/+0.083	12	18	17	1
HPP20F-101216-06	10	+0.025/+0.083	12	16	6	1
HPP20F-101216-09	10	+0.025/+0.083	12	16	9	1
HPP20F-1213-12S	12	+0.016/+0.059	13	17	12	0.5
HPP20F-1214-06	12	+0.032/+0.102	14	20	6	1
HPP20F-1214-07	12	+0.032/+0.102	14	20	7	1
HPP20F-1214-09	12	+0.032/+0.102	14	20	9	1
HPP20F-1214-10	12	+0.032/+0.102	14	20	10	1
HPP20F-1214-11	12	+0.032/+0.102	14	20	11	1
HPP20F-1214-12	12	+0.032/+0.102	14	20	12	1
HPP20F-1214-15	12	+0.032/+0.102	14	20	15	1

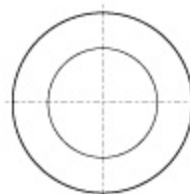
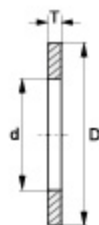
订购编号 Order PN	d ₁ [mm]	d ₁ -公差 After fitting [mm]	d ₂ [mm]	d ₂ [d13] [mm]	L[h13] [mm]	t _{0.12} [mm]
HPP20F-1214-17	12	+0.032/+0.102	14	20	17	1
HPP20F-1214-20	12	+0.032/+0.102	14	20	20	1
HPP20F-1214-24	12	+0.032/+0.102	14	20	24	1
HPP20F-1416-03	14	+0.032/+0.102	16	22	3	1
HPP20F-1416-04	14	+0.032/+0.102	16	22	4	1
HPP20F-1416-06	14	+0.032/+0.102	16	22	6	1
HPP20F-1416-08	14	+0.032/+0.102	16	22	8	1
HPP20F-1416-12	14	+0.032/+0.102	16	22	12	1
HPP20F-1416-17	14	+0.032/+0.102	16	22	17	1
HPP20F-1416-21	14	+0.032/+0.102	16	22	21	1
HPP20F-1517-05	15	+0.032/+0.102	17	23	5	1
HPP20F-1517-09	15	+0.032/+0.102	17	23	9	1
HPP20F-1517-12	15	+0.032/+0.102	17	23	12	1
HPP20F-1517-17	15	+0.032/+0.102	17	23	17	1
HPP20F-1517-20	15	+0.032/+0.102	17	23	20	1
HPP20F-1618-09	16	+0.032/+0.102	18	24	9	1
HPP20F-1618-12	16	+0.032/+0.102	18	24	12	1
HPP20F-1618-17	16	+0.032/+0.102	18	24	17	1
HPP20F-1618-21	16	+0.032/+0.102	18	24	21	1
HPP20F-1719-09	17	+0.032/+0.102	19	25	9	1
HPP20F-1719-25	17	+0.032/+0.102	19	25	25	1
HPP20F-1820-04	18	+0.032/+0.102	20	26	4	1
HPP20F-1820-06	18	+0.032/+0.102	20	26	6	1
HPP20F-1820-11	18	+0.032/+0.102	20	26	11	1
HPP20F-1820-12	18	+0.032/+0.102	20	26	12	1
HPP20F-1820-17	18	+0.032/+0.102	20	26	17	1
HPP20F-1820-22	18	+0.032/+0.102	20	26	22	1
HPP20F-1820-30	18	+0.032/+0.102	20	26	30	1
HPP20F-2023-3.2	20	+0.04/+0.124	23	30	3.2	1.5
HPP20F-2023-07	20	+0.04/+0.124	23	30	7	1.5
HPP20F-2023-11.5	20	+0.04/+0.124	23	30	11.5	1.5
HPP20F-2023-16.5	20	+0.04/+0.124	23	30	16.5	1.5
HPP20F-2023-21.5	20	+0.04/+0.124	23	30	21.5	1.5
HPP20F-222535-09	22	+0.04/+0.124	25	35	9	1.5
HPP20F-2427-10	24	+0.04/+0.124	27	32	10	1.5
HPP20F-2528-11.5	25	+0.04/+0.124	28	35	11.5	1.5
HPP20F-2528-16.5	25	+0.04/+0.124	28	35	16.5	1.5
HPP20F-2528-21.5	25	+0.04/+0.124	28	35	21.5	1.5
HPP20F-2528-30	25	+0.04/+0.124	28	35	30	1.5
HPP20F-2830-36	28	+0.04/+0.124	30	35	36	2
HPP20F-3032-12	30	+0.04/+0.124	32	37	12	1
HPP20F-3034-16	30	+0.04/+0.124	34	42	16	2
HPP20F-3034-20	30	+0.04/+0.124	34	42	20	2
HPP20F-3034-26	30	+0.04/+0.124	34	42	26	2
HPP20F-3034-37	30	+0.04/+0.124	34	42	37	2
HPP20F-3034-45	30	+0.04/+0.124	34	42	45	2
HPP20F-3236-16	32	+0.05/+0.15	36	40	16	2

订购编码 Order PN	d ₁ [mm]	d ₁ - 公差 After fitting [mm]	d ₂ [mm]	d ₂ [d13] [mm]	L[h13] [mm]	t _{0.15} [mm]
HPP20F-3236-26	32	+0.05/+0.15	36	40	26	2
HPP20F-3539-07	35	+0.05/+0.15	39	47	7	2
HPP20F-3539-12	35	+0.05/+0.15	39	47	12	2
HPP20F-3539-16	35	+0.05/+0.15	39	47	16	2
HPP20F-3539-26	35	+0.05/+0.15	39	47	26	2
HPP20F-3539-36	35	+0.05/+0.15	39	47	36	2
HPP20F-4044-14	40	+0.05/+0.15	44	52	14	2
HPP20F-4044-20	40	+0.05/+0.15	44	52	20	2
HPP20F-4044-30	40	+0.05/+0.15	44	52	30	2
HPP20F-4044-40	40	+0.05/+0.15	44	52	40	2
HPP20F-4044-50	40	+0.05/+0.15	44	52	50	2
HPP20F-4246-50	42	+0.05/+0.15	46	53	50	2
HPP20F-4550-30	45	+0.05/+0.15	50	58	30	2
HPP20F-4550-50	45	+0.05/+0.15	50	58	50	2

订购编码 Order PN	d ₁ [mm]	d ₁ - 公差 After fitting [mm]	d ₂ [mm]	d ₂ [d13] [mm]	L[h13] [mm]	t _{0.15} [mm]
HPP20F-5055-10	50	+0.05/+0.15	55	63	10	2
HPP20F-5055-40	50	+0.05/+0.15	55	63	40	2
HPP20F-5055-50	50	+0.05/+0.15	55	63	50	2
HPP20F-6065-07	60	+0.06/+0.18	65	73	7	2
HPP20F-6065-22	60	+0.06/+0.18	65	73	22	2
HPP20F-6065-30	60	+0.06/+0.18	65	73	30	2
HPP20F-6065-50	60	+0.06/+0.18	65	73	50	2
HPP20F-6570-50	65	+0.06/+0.18	70	78	50	2
HPP20F-7075-50	70	+0.06/+0.18	75	83	50	2
HPP20F-9095-11	90	+0.072/+0.212	95	103	11	2.5
HPP20F-100105-11.5	100	+0.072/+0.212	105	113	11.5	2.5
HPP20F-100105-100	100	+0.072/+0.212	105	113	100	2.5

*d₁ 公差为压入标准 H7 座孔 (ISO3547-1) 后公差*Tolerance d₁: after being pressed into housing H7(ISO3547-1)

垫片 Metric Thrust Washers



订购编码 Order PN:

HPP20 W-0509-006

d D T
 垫片 Washer
 材料 Material

订购编码 Order PN	d ^{+0.25} [mm]	D _{-0.25} [mm]	T _{-0.05} [mm]
HPP20W-0509-006	5	9	0.6
HPP20W-0615-015	6	15	1.5
HPP20W-0620-015	6	20	1.5
HPP20W-0815-005	8	15	0.5
HPP20W-0815-015	8	15	1.5
HPP20W-0818-005	8	18	0.5
HPP20W-0818-010	8	18	1.0
HPP20W-0818-015	8	18	1.5
HPP20W-1018-010	10	18	1.0
HPP20W-1018-015	10	18	1.5
HPP20W-1018-020	10	18	2.0
HPP20W-1224-012	12	24	1.2
HPP20W-1224-015	12	24	1.5
HPP20W-1426-015	14	26	1.5
HPP20W-1524-015	15	24	1.5

订购编码 Order PN	d ^{+0.25} [mm]	D _{-0.25} [mm]	T _{-0.05} [mm]
HPP20W-1630-015	16	30	1.5
HPP20W-1832-015	18	32	1.5
HPP20W-2032-010	20	32	1.0
HPP20W-2036-015	20	36	1.5
HPP20W-2238-015	22	38	1.5
HPP20W-2442-015	24	42	1.5
HPP20W-2644-015	26	44	1.5
HPP20W-2848-015	28	48	1.5
HPP20W-3254-015	32	54	1.5
HPP20W-3862-015	38	62	1.5
HPP20W-4266-015	42	66	1.5
HPP20W-4874-020	48	74	2.0
HPP20W-5278-020	52	78	2.0
HPP20W-6290-020	62	90	2.0

* 根据要求提供定位孔设计 The fixing bore design upon request