

HPP21-工程塑料轴承 Plastic Plain Bearings

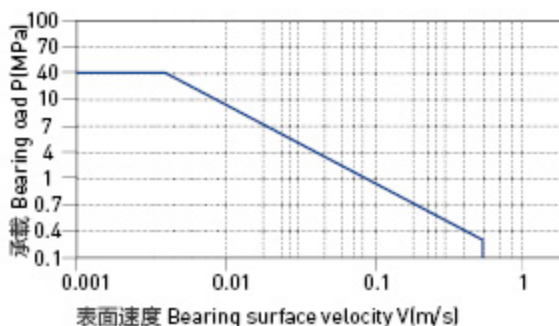
轴承PV值 PV Value

HPP21塑料轴承最大运行PV值为 $0.15\text{N/mm}^2 \times \text{m/s}$;由此决定轴承所承受的载荷与速度成反比, 详细查阅图表HPP21-1。

The max PV value of the HPP17 plastic bearing is $0.15\text{N/mm}^2 \times \text{m/s}$ which determines the load capacity of bearing is inversely proportional to the speed. Please refer to the chart for more detailed information (Graph HPP21-1).

图表 HPP21-1: PV 图表

Graph HPP21-1: Permissible PV value for HPP21



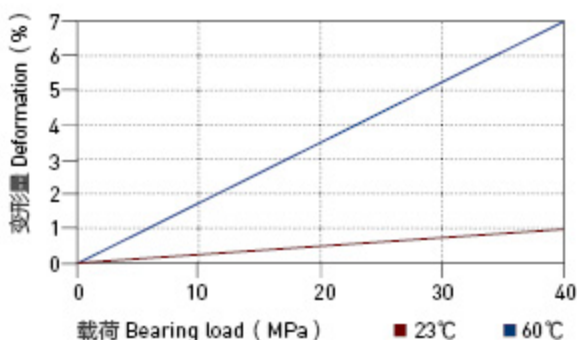
轴承的载荷、速度、温度 The Relation Of Load, Speed And Temperature

HPP21系列轴承可承受最大静载荷为40Mpa, 在此载荷下轴承的最大压缩变形量参考图表HPP21-2, 轴承实际工作载荷略小于40Mpa, 载荷还受到运行速度以及温度的影响, 速度越快(Vmax: 0.5m/s)会导致摩擦温度上升, 而温度上升(Tmax: 90℃)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HPP21-3。

HPP21 allows the Max static load of 40Mpa, The max compressive deformation rate under the max load is listed in Graph HPP21-2, The actual load capacity of bearing is slightly less than 40Mpa, The bearing load is variable against the speed and temperature, Fast speed (Vmax: 0.5m/s) results into higher temperature (Tmax:90℃) which decreases the load capacity of the bearing. Please refer to the Graph HPP21-3 for such variation.

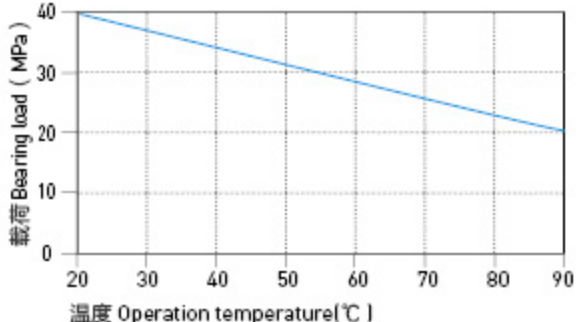
图表 HPP21-2: 载荷 - 温度 - 变形量图表

Graph HPP21-2: Load-Temperature deformation



图表 HPP21-3: 载荷 - 温度图表

Graph HPP21-3: Load-Temperature diagrams



HPP21-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

与其它塑料轴承基本一样，图HPP21-4表明HPP21轴承在载荷保持不变的情况下摩擦系数随着运行速度的增加而升高，图HPP21-5表明HPP21轴承在保持速度不变时摩擦系数随着载荷的增加而逐步减低，根据图HPP21-6表明HPP21轴承的摩擦系数会随着轴表面粗糙度的变化而不同，我们推荐使用轴粗糙度为Ra0.3—0.6 μ m；

Similar with most of the plastic bearings, the friction factor of HPP21 is increased along with the operation speed when the loading is stable (see Graph HPP21-4) and is decreased along with the loading increasing when the operation speed is stable (see Graph HPP21-5). From Graph HPP21-6, it shows the friction factor of HPP21 is variable against different shaft surface roughness. The recommended shaft surface roughness is Ra0.3~0.6.

HPP21	干运行 Dry	油脂 Grease	油 Oil	水 Water
摩擦系数 μ Friction coef.	0.07~0.20	0.09	0.04	0.04

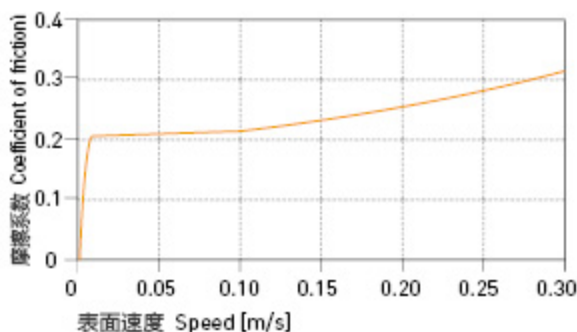
■ 磨损与轴材料 Wearing and shaft material

图HPP21-7表明低载时硬化钢轴与硬铬钢轴比较适合用于HPP21轴承。HPP21在用于摆动运动时磨损值明显要优越于用于旋转运动。

Graph HPP21-7 shows that HPP21 is rather suitable for hardened steel shaft and hardened chrome steel shaft under lower loading and Graph HPP21-7 shows that HPP21 wearing feature is better for oscillation operation than of rotation operation.

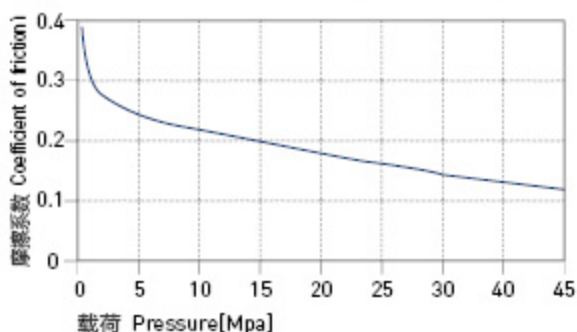
图表 HPP21-4: 摩擦系数与速度变化关系图表 P=2MPa

Graph HPP21-4: Coefficient of friction & the speed of bearing, P=2MPa



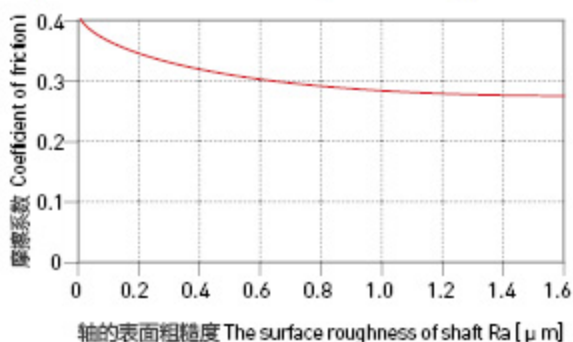
图表 HPP21-5: 摩擦系数与载荷变化关系图表 v=0.2m/s

Graph HPP21-5: Coefficient of friction & the pressure of bearing, v=0.2m/s



图表 HPP21-6: 摩擦系数与轴表面粗糙度关系图表

Graph HPP21-6: Coefficient of friction & the surface roughness of shaft



HPP21-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

HPP21塑料轴承能抵抗部分弱酸以及各类润滑油的腐蚀。

HPP21 is good at chemical resistance against weak acidic medium and various kinds of lubricants..

■ 吸水性 Water Absorbability

在标准大气压中, HPP21塑料轴承的吸水率为0.2%, 浸泡水中最大平衡吸水率为0.4%; 由于此吸水率的特性, 此轴承可以应用于一般潮湿环境。

The water absorb rate of HPP21 is 0.2% under the atmospheric pressure while it is 0.4% when the material is immersed into water. With its low water absorbability, the material is suitable for humid environment applications.

■ 抗UV性能 UV Resistance

HPP21长久暴露在紫外线下颜色会发生褪变。材料性能会有所下降。

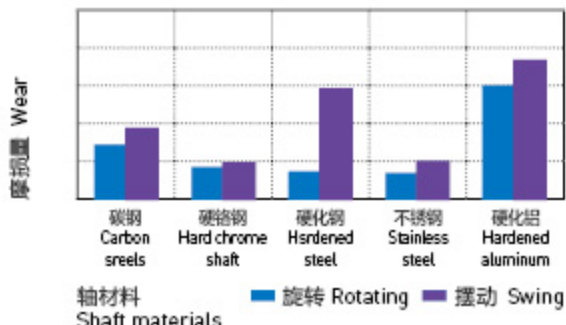
Disintegration could be possible for the material HPP21 after long period of exposing under the UV ray and therefore the performance of the material will be reduced.

■ 安装公差 Installation Tolerances

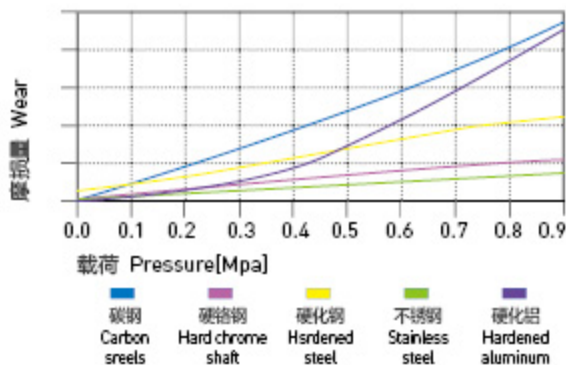
HPP21塑料轴承压装后公差Tolerances after pressfit

直径 Di. [mm]	HPP21 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

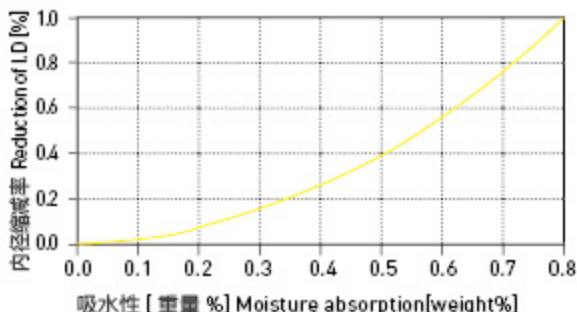
图表 HPP21-7: 在不同轴材料上旋转时的磨损量 $P=2\text{MPa}$, $v=0.2\text{m/s}$
Graph HPP21-7: The bearing wear under rotating with different shaft materials, $p=2\text{MPa}$, $v=0.2\text{m/s}$



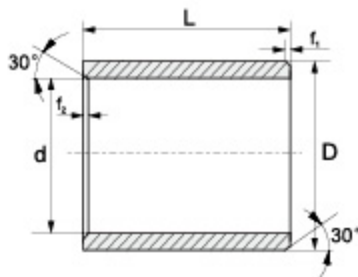
图表 HPP7-8: 旋转磨损随轴材料与压力变化关系 $v=0.2\text{m/s}$
Graph HPP7-8: The bearing wear & pressure under rotating with different shaft materials, $v=0.2\text{m/s}$



图表 HPP7-9: 吸水性的影响
Graph HPP7-9: Effect of moisture absorption on HPP7 bearings



HPP21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:

HPP21-0203-03
 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]
HPP21-0203-03	2	+0.014/+0.054	3.5	3
HPP21-0304-03	3	+0.014/+0.054	4.5	3
HPP21-0304-05	3	+0.014/+0.054	4.5	5
HPP21-0304-06	3	+0.014/+0.054	4.5	6
HPP21-0405-04	4	+0.02/+0.068	5.5	4
HPP21-0405-06	4	+0.02/+0.068	5.5	6
HPP21-0506-05S	5	+0.01/+0.04	6	5
HPP21-0507-05	5	+0.02/+0.068	7	5
HPP21-050708	5	+0.02/+0.068	7	8
HPP21-0507-10	5	+0.02/+0.068	7	10
HPP21-0608-04	6	+0.02/+0.068	8	4
HPP21-0608-05	6	+0.02/+0.068	8	5
HPP21-0608-06	6	+0.02/+0.068	8	6
HPP21-0608-08	6	+0.02/+0.068	8	8
HPP21-0608-09	6	+0.02/+0.068	8	9
HPP21-0608-10	6	+0.02/+0.068	8	10
HPP21-0608-11	6	+0.02/+0.068	8	11
HPP21-0810-05	8	+0.025/+0.083	10	5
HPP21-0810-06	8	+0.025/+0.083	10	6
HPP21-0810-07	8	+0.025/+0.083	10	7
HPP21-0810-08	8	+0.025/+0.083	10	8
HPP21-0810-10	8	+0.025/+0.083	10	10
HPP21-0810-12	8	+0.025/+0.083	10	12
HPP21-0810-13	8	+0.025/+0.083	10	13
HPP21-0810-15	8	+0.025/+0.083	10	15
HPP21-0810-21	8	+0.025/+0.083	10	21
HPP21-1011-06	10	+0.025/+0.083	11	6
HPP21-1012-04	10	+0.025/+0.083	12	4
HPP21-1012-05	10	+0.025/+0.083	12	5
HPP21-1012-06	10	+0.025/+0.083	12	6
HPP21-1012-07	10	+0.025/+0.083	12	7
HPP21-1012-08	10	+0.025/+0.083	12	8
HPP21-1012-09	10	+0.025/+0.083	12	9
HPP21-1012-10	10	+0.025/+0.083	12	10
HPP21-1012-12	10	+0.025/+0.083	12	12
HPP21-1012-14	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]
HPP21-1012-15	10	+0.025/+0.083	12	15
HPP21-1012-17	10	+0.025/+0.083	12	17
HPP21-1012-20	10	+0.025/+0.083	12	20
HPP21-1213-12S	12	+0.016/+0.059	13	12
HPP21-1214-04	12	+0.032/+0.102	14	4
HPP21-1214-06	12	+0.032/+0.102	14	6
HPP21-1214-08	12	+0.032/+0.102	14	8
HPP21-1214-10	12	+0.032/+0.102	14	10
HPP21-1214-12	12	+0.032/+0.102	14	12
HPP21-1214-14	12	+0.032/+0.102	14	14
HPP21-1214-15	12	+0.032/+0.102	14	15
HPP21-1214-20	12	+0.032/+0.102	14	20
HPP21-1214-25	12	+0.032/+0.102	14	25
HPP21-1315-15	13	+0.032/+0.102	15	15
HPP21-1315-25	13	+0.032/+0.102	15	25
HPP21-1416-03	14	+0.032/+0.102	16	3
HPP21-1416-08	14	+0.032/+0.102	16	8
HPP21-1416-10	14	+0.032/+0.102	16	10
HPP21-1416-15	14	+0.032/+0.102	16	15
HPP21-1416-20	14	+0.032/+0.102	16	20
HPP21-1416-25	14	+0.032/+0.102	16	25
HPP21-1517-10	15	+0.032/+0.102	17	10
HPP21-1517-12	15	+0.032/+0.102	17	12
HPP21-1517-15	15	+0.032/+0.102	17	15
HPP21-1517-20	15	+0.032/+0.102	17	20
HPP21-1517-25	15	+0.032/+0.102	17	25
HPP21-1618-10	16	+0.032/+0.102	18	10
HPP21-1618-12	16	+0.032/+0.102	18	12
HPP21-1618-15	16	+0.032/+0.102	18	is
HPP21-1618-20	16	+0.032/+0.102	18	20
HPP21-1618-25	16	+0.032/+0.102	18	25
HPP21-1618-30	16	+0.032/+0.102	18	30
HPP21-1820-10	18	+0.032/+0.102	20	10
HPP21-1820-12	18	+0.032/+0.102	20	12
HPP21-1820-15	18	+0.032/+0.102	20	15
HPP21-1820-20	18	+0.032/+0.102	20	20

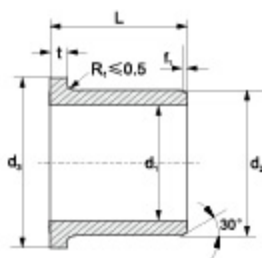
订购编码 Order PN	d [mm]	d- 公差 After fitting [mm]	D [mm]	L(h13) [mm]
HPP21-1820-25	18	+0.032/+0.102	20	25
HPP21-2022-20	20	+0.04/+0.124	22	20
HPP21-2022-30	20	+0.04/+0.124	22	30
HPP21-2023-10	20	+0.04/+0.124	23	10
HPP21-2023-15	20	+0.04/+0.124	23	15
HPP21-2023-20	20	+0.04/+0.124	23	20
HPP21-2023-25	20	+0.04/+0.124	23	25
HPP21-2023-30	20	+0.04/+0.124	23	30
HPP21-2225-15	22	+0.04/+0.124	25	15
HPP21-2225-20	22	+0.04/+0.124	25	20
HPP21-2225-25	22	+0.04/+0.124	25	25
HPP21-2225-30	22	+0.04/+0.124	25	30
HPP21-2528-12	25	+0.04/+0.124	28	12
HPP21-2528-15	25	+0.04/+0.124	28	15
HPP21-2528-20	25	+0.04/+0.124	28	20
HPP21-2528-24	25	+0.04/+0.124	28	24
HPP21-2528-25	25	+0.04/+0.124	28	25
HPP21-2528-30	25	+0.04/+0.124	28	30
HPP21-2528-35	25	+0.04/+0.124	28	35
HPP21-2832-30	28	+0.04/+0.124	32	30
HPP21-3034-15	30	+0.04/+0.124	34	15
HPP21-3034-20	30	+0.04/+0.124	34	20
HPP21-3034-24	30	+0.04/+0.124	34	24
HPP21-3034-25	30	+0.04/+0.124	34	25
HPP21-3034-30	30	+0.04/+0.124	34	30
HPP21-3034-35	30	+0.04/+0.124	34	35
HPP21-3034-40	30	+0.04/+0.124	34	40
HPP21-3236-30	32	+0.05/+0.15	36	30
HPP21-3236-40	32	+0.05/+0.15	36	40
HPP21-3539-14	35	+0.05/+0.15	39	14
HPP21-3539-20	35	+0.05/+0.15	39	20
HPP21-3539-25	35	+0.05/+0.15	39	25
HPP21-3539-30	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]
HPP21-3539-40	35	+0.05/+0.15	39	40
HPP21-3539-50	35	+0.05/+0.15	39	50
HPP21-3640-20	36	+0.05/+0.15	40	20
HPP21-4044-10	40	+0.05/+0.15	44	10
HPP21-4044-16	40	+0.05/+0.15	44	16
HPP21-4044-20	40	+0.05/+0.15	44	20
HPP21-4044-30	40	+0.05/+0.15	44	30
HPP21-4044-40	40	+0.05/+0.15	44	40
HPP21-4044-50	40	+0.05/+0.15	44	50
HPP21-4246-40	42	+0.05/+0.15	46	40
HPP21-4246-50	42	+0.05/+0.15	46	50
HPP21-4550-40	45	+0.05/+0.15	50	40
HPP21-4550-50	45	+0.05/+0.15	50	50
HPP21-5055-20	50	+0.05/+0.15	55	20
HPP21-5055-30	50	+0.05/+0.15	55	30
HPP21-5055-40	50	+0.05/+0.15	55	40
HPP21-5055-50	50	+0.05/+0.15	55	50
HPP21-5560-20	55	+0.06/+0.18	60	20
HPP21-5560-26	55	+0.06/+0.18	60	26
HPP21-5560-40	55	+0.06/+0.18	60	40
HPP21-5560-50	55	+0.06/+0.18	60	50
HPP21-5560-60	55	+0.06/+0.18	60	60
HPP21-6065-30	60	+0.06/+0.18	65	30
HPP21-6065-40	60	+0.06/+0.18	65	40
HPP21-6065-50	60	+0.06/+0.18	65	50
HPP21-6065-60	60	+0.06/+0.18	65	60
HPP21-6570-50	65	+0.06/+0.18	70	50
HPP21-7075-60	70	+0.06/+0.18	75	60
HPP21-7580-40	75	+0.06/+0.18	80	40
HPP21-115121-90	115	+0.072/+0.212	121	90
HPP21-120125-100	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:

HPP21 F-0304-03

d_1 d_2 L
 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]
HPP21F-0304-03	3	+0.014/+0.054	4.5	7.5	3	0.75
HPP21F-0304-05	3	+0.014/+0.054	4.5	7.5	5	0.75
HPP21F-0405-03	4	+0.02/+0.068	5.5	9.5	3	0.75
HPP21F-0405-04	4	+0.02/+0.068	5.5	9.5	4	0.75
HPP21F-0405-06	4	+0.02/+0.068	5.5	9.5	6	0.75
HPP21F-0506-3.5S	5	+0.01/+0.04	6	10	3.5	0.5
HPP21F-0506-05S	5	+0.01/+0.04	6	10	5	0.5
HPP21F-050614-06S	5	+0.01/+0.04	6	14	6	0.5
HPP21F-0507-03	5	+0.02/+0.068	7	11	3	1
HPP21F-0507-04	5	+0.02/+0.068	7	11	4	1
HPP21F-0507-05	5	+0.02/+0.068	7	11	5	1
HPP21F-0507-07	5	+0.02/+0.068	7	11	7	1
HPP21F-0607-10	6	+0.01/+0.04	7	11	10	0.5
HPP21F-0608-04	6	+0.02/+0.068	8	12	4	1
HPP21F-0608-05	6	+0.02/+0.068	8	12	5	1
HPP21F-0608-06	6	+0.02/+0.068	8	12	6	1
HPP21F-0608-07	6	+0.02/+0.068	8	12	7	1
HPP21F-0608-08	6	+0.02/+0.068	8	12	8	1
HPP21F-0608-10	6	+0.02/+0.068	8	12	10	1
HPP21F-0708-08S	7	+0.013/+0.049	8	12	8	0.5
HPP21F-0809-12	8	+0.013/+0.049	9	13	12	0.5
HPP21F-0810-04	8	+0.025/+0.083	10	15	4	1
HPP21F-0810-05	8	+0.025/+0.083	10	15	5	1
HPP21F-0810-07	8	+0.025/+0.083	10	15	7	1
HPP21F-0810-09	8	+0.025/+0.083	10	15	9	1
HPP21F-0810-10	8	+0.025/+0.083	10	15	10	1
HPP21F-0810-15	8	+0.025/+0.083	10	15	15	1
HPP21F-0810-30	8	+0.025/+0.083	10	15	30	1
HPP21F-1012-04	10	+0.025/+0.083	12	18	4	1
HPP21F-1012-05	10	+0.025/+0.083	12	18	5	1
HPP21F-1012-06	10	+0.025/+0.083	12	18	6	1
HPP21F-1012-07	10	+0.025/+0.083	12	18	7	1
HPP21F-1012-09	10	+0.025/+0.083	12	18	9	1
HPP21F-1012-10	10	+0.025/+0.083	12	18	10	1
HPP21F-1012-12	10	+0.025/+0.083	12	18	12	1
HPP21F-1012-15	10	+0.025/+0.083	12	18	15	1
HPP21F-1012-17	10	+0.025/+0.083	12	18	17	1
HPP21F-101216-06	10	+0.025/+0.083	12	16	6	1
HPP21F-101216-09	10	+0.025/+0.083	12	16	9	1
HPP21F-1213-12S	12	+0.016/+0.059	13	17	12	0.5
HPP21F-1214-06	12	+0.032/+0.102	14	20	6	1
HPP21F-1214-07	12	+0.032/+0.102	14	20	7	1
HPP21F-1214-09	12	+0.032/+0.102	14	20	9	1
HPP21F-1214-10	12	+0.032/+0.102	14	20	10	1
HPP21F-1214-11	12	+0.032/+0.102	14	20	11	1
HPP21F-1214-12	12	+0.032/+0.102	14	20	12	1
HPP21F-1214-15	12	+0.032/+0.102	14	20	15	1

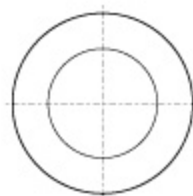
订购编号 Order PN	d ₁ [mm]	d ₁ 公差 After fitting [mm]	d ₂ [mm]	d ₂ [d13] [mm]	L[h13] [mm]	t _{0.12} [mm]
HPP21F-1214-17	12	+0.032/+0.102	14	20	17	1
HPP21F-1214-20	12	+0.032/+0.102	14	20	20	1
HPP21F-1214-24	12	+0.032/+0.102	14	20	24	1
HPP21F-1416-03	14	+0.032/+0.102	16	22	3	1
HPP21F-1416-04	14	+0.032/+0.102	16	22	4	1
HPP21F-1416-06	14	+0.032/+0.102	16	22	6	1
HPP21F-1416-08	14	+0.032/+0.102	16	22	8	1
HPP21F-1416-12	14	+0.032/+0.102	16	22	12	1
HPP21F-1416-17	14	+0.032/+0.102	16	22	17	1
HPP21F-1416-21	14	+0.032/+0.102	16	22	21	1
HPP21F-1517-05	15	+0.032/+0.102	17	23	5	1
HPP21F-1517-09	15	+0.032/+0.102	17	23	9	1
HPP21F-1517-12	15	+0.032/+0.102	17	23	12	1
HPP21F-1517-17	15	+0.032/+0.102	17	23	17	1
HPP21F-1517-20	15	+0.032/+0.102	17	23	20	1
HPP21F-1618-09	16	+0.032/+0.102	18	24	9	1
HPP21F-1618-12	16	+0.032/+0.102	18	24	12	1
HPP21F-1618-17	16	+0.032/+0.102	18	24	17	1
HPP21F-1618-21	16	+0.032/+0.102	18	24	21	1
HPP21F-1719-09	17	+0.032/+0.102	19	25	9	1
HPP21F-1719-25	17	+0.032/+0.102	19	25	25	1
HPP21F-1820-04	18	+0.032/+0.102	20	26	4	1
HPP21F-1820-06	18	+0.032/+0.102	20	26	6	1
HPP21F-1820-11	18	+0.032/+0.102	20	26	11	1
HPP21F-1820-12	18	+0.032/+0.102	20	26	12	1
HPP21F-1820-17	18	+0.032/+0.102	20	26	17	1
HPP21F-1820-22	18	+0.032/+0.102	20	26	22	1
HPP21F-1820-30	18	+0.032/+0.102	20	26	30	1
HPP21F-2023-3.2	20	+0.04/+0.124	23	30	3.2	1.5
HPP21F-2023-07	20	+0.04/+0.124	23	30	7	1.5
HPP21F-2023-11.5	20	+0.04/+0.124	23	30	11.5	1.5
HPP21F-2023-16.5	20	+0.04/+0.124	23	30	16.5	1.5
HPP21F-2023-21.5	20	+0.04/+0.124	23	30	21.5	1.5
HPP21F-222535-09	22	+0.04/+0.124	25	35	9	1.5
HPP21F-2427-10	24	+0.04/+0.124	27	32	10	1.5
HPP21F-2528-11.5	25	+0.04/+0.124	28	35	11.5	1.5
HPP21F-2528-16.5	25	+0.04/+0.124	28	35	16.5	1.5
HPP21F-2528-21.5	25	+0.04/+0.124	28	35	21.5	1.5
HPP21F-2528-30	25	+0.04/+0.124	28	35	30	1.5
HPP21F-2830-36	28	+0.04/+0.124	30	35	36	2
HPP21F-3032-12	30	+0.04/+0.124	32	37	12	1
HPP21F-3034-16	30	+0.04/+0.124	34	42	16	2
HPP21F-3034-20	30	+0.04/+0.124	34	42	20	2
HPP21F-3034-26	30	+0.04/+0.124	34	42	26	2
HPP21F-3034-37	30	+0.04/+0.124	34	42	37	2
HPP21F-3034-45	30	+0.04/+0.124	34	42	45	2
HPP21F-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 _{0.12} [mm]
HPP21F-3236-26	32	+0.05/+0.15	36	40	26	2
HPP21F-3539-07	35	+0.05/+0.15	39	47	7	2
HPP21F-3539-12	35	+0.05/+0.15	39	47	12	2
HPP21F-3539-16	35	+0.05/+0.15	39	47	16	2
HPP21F-3539-26	35	+0.05/+0.15	39	47	26	2
HPP21F-3539-36	35	+0.05/+0.15	39	47	36	2
HPP21F-4044-14	40	+0.05/+0.15	44	52	14	2
HPP21F-4044-20	40	+0.05/+0.15	44	52	20	2
HPP21F-4044-30	40	+0.05/+0.15	44	52	30	2
HPP21F-4044-40	40	+0.05/+0.15	44	52	40	2
HPP21F-4044-50	40	+0.05/+0.15	44	52	50	2
HPP21F-4246-50	42	+0.05/+0.15	46	53	50	2
HPP21F-4550-30	45	+0.05/+0.15	50	58	30	2
HPP21F-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 _{0.12} [mm]
HPP21F-5055-10	50	+0.05/+0.15	55	63	10	2
HPP21F-5055-40	50	+0.05/+0.15	55	63	40	2
HPP21F-5055-50	50	+0.05/+0.15	55	63	50	2
HPP21F-6065-07	60	+0.06/+0.18	65	73	7	2
HPP21F-6065-22	60	+0.06/+0.18	65	73	22	2
HPP21F-6065-30	60	+0.06/+0.18	65	73	30	2
HPP21F-6065-50	60	+0.06/+0.18	65	73	50	2
HPP21F-6570-50	65	+0.06/+0.18	70	78	50	2
HPP21F-7075-50	70	+0.06/+0.18	75	83	50	2
HPP21F-9095-11	90	+0.072/+0.212	95	103	11	2.5
HPP21F-100105-11.5	100	+0.072/+0.212	105	113	11.5	2.5
HPP21F-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:

HPP21 W-0509-006

材料 Material

垫片 Washer

d D T

订购编码 Order PN	d ^{+0.05} [mm]	D _{-0.25} [mm]	T _{-0.05} [mm]
HPP21W-0509-006	5	9	0.6
HPP21W-0615-015	6	15	1.5
HPP21W-0620-015	6	20	1.5
HPP21W-0815-005	8	15	0.5
HPP21W-0815-015	8	15	1.5
HPP21W-0818-010	8	18	1.0
HPP21W-0818-015	8	18	1.5
HPP21W-1018-010	10	18	1.0
HPP21W-1018-015	10	18	1.5
HPP21W-1018-020	10	18	2.0
HPP21W-1224-015	12	24	1.5
HPP21W-1426-015	14	26	1.5
HPP21W-1524-015	15	24	1.5
HPP21W-1630-015	16	30	1.5

订购编码 Order PN	d ^{+0.05} [mm]	D _{-0.25} [mm]	T _{-0.05} [mm]
HPP21W-1832-015	18	32	1.5
HPP21W-2036-015	20	36	1.5
HPP21W-2238-015	22	38	1.5
HPP21W-2442-015	24	42	1.5
HPP21W-2640-0075	26	40	0.75
HPP21W-2644-015	26	44	1.5
HPP21W-2848-015	28	48	1.5
HPP21W-3254-015	32	54	1.5
HPP21W-3862-015	38	62	1.5
HPP21W-4266-015	42	66	1.5
HPP21W-4874-020	48	74	2.0
HPP21W-5278-020	52	78	2.0
HPP21W-6290-020	62	90	2.0

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