

## For high loads – iglidur<sup>®</sup> Q

- Excellent wear resistance, especially for extreme loads
- Recommended for extreme pv values
- Good coefficients of friction
- Resistant to dirt
- Lubrication and maintenance free
- Standard range from stock

Excellent wear resistance, especially for extreme loads

Recommended for extreme pv values

Good coefficients of friction

Resistant to dirt

iglidur® Q is the low priced solution for high duty cycles at high to extreme loads. Bearing made from this material can be used in all types of motion, but is best suited to oscillating applications.



**When to use it?**

- For oscillating applications
- Excellent wear resistance, especially for extreme loads
- Recommended for extreme pv values
- If the bearing should be insensitive to dirt



**When not to use it?**

- For underwater applications
  - ▶ iglidur® H370, page 299
- When temperatures are constantly greater than +135 °C
  - ▶ iglidur® H, page 283
  - ▶ iglidur® X, page 133
  - ▶ iglidur® Z, page 263
- In situations involving high edge loads or strong impact loads
  - ▶ iglidur® Q2, page 409



**Available from stock**

Detailed information about delivery time online.



max. +135 °C  
min. -40 °C



**Block pricing online**

No minimum order value. From batch size 1



Ø 6–90 mm  
more dimensions on request



**Typical application areas**

● Construction machinery ● Sheet metal industry ● Agricultural machines ● Railway technology ● Doors and gates etc.



**Inch dimensions available**  
▶ From page 1183

**Material properties table**

General properties	Unit	iglidur® Q	Testing method
Density	g/cm³	1.40	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.9	DIN 53495
Max. water absorption	% weight	4.9	
Coefficient of sliding friction, dynamic against steel	μ	0.05–0.15	
pv value, max. (dry)	MPa · m/s	0.55	
Mechanical properties			
Modulus of elasticity	MPa	4,500	DIN 53457
Tensile strength at +20 °C	MPa	120	DIN 53452
Compressive strength	MPa	89	
Max. recommended surface pressure (+20 °C)	MPa	100	
Shore-D hardness		83	DIN 53505
Physical and thermal properties			
Max. long term application temperature	°C	+135	
Max. short term application temperature	°C	+155	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.23	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	K <sup>-1</sup> · 10 <sup>-6</sup>	5	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	> 10 <sup>15</sup>	DIN IEC 93
Surface resistance	Ω	> 10 <sup>12</sup>	DIN 53482

Table 01: Material properties table

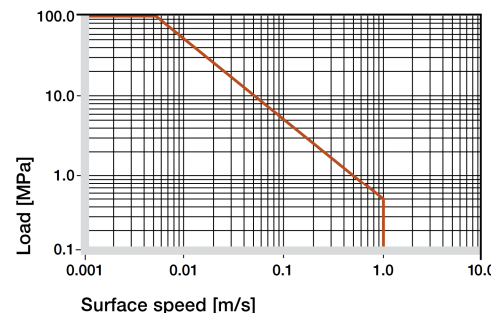


Diagram 01: Permissible pv values for iglidur® Q bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

**Moisture absorption**

The moisture absorption of iglidur® Q plain bearings is approximately 0.9 % in ambient conditions. The saturation limit in water is 4.9 %. This must be taken into account for these types of applications.

▶ Diagram, [www.igus.eu/q-moisture](http://www.igus.eu/q-moisture)

**Vacuum**

iglidur® Q plain bearings outgas in a vacuum. Therefore, only dehumidified bearings are suitable in vacuum.

**Radiation resistance**

Plain bearings made from iglidur® D are resistant to radiation up to an intensity of 3 · 10<sup>3</sup> Gy.

**UV resistance**

The tribological properties of iglidur® Q plain bearings stay constant for the most part under weathering effects.

Medium	Resistance
Alcohols	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to -
Strong acids	-
Diluted alkalines	+
Strong alkalines	0

**+ resistant 0 conditionally resistant - not resistant**  
All data given at room temperature [+20 °C]

Table 02: Chemical resistance

▶ Chemical table, page 1226

iglidur® Q bearings were developed especially for extreme loads. Under high loads, iglidur® Q figures among the iglidur® materials that display the best wear resistance. From a radial pressure of 25 MPa, it outclasses even bearings made from the highly abrasion-resistant iglidur® W300. Specific solid lubricants, precisely integrated into the material, ensure that the maintenance free dry operation is guaranteed under any load.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q plain bearings decreases. The diagram 02 shows this inverse relationship. The recommended maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

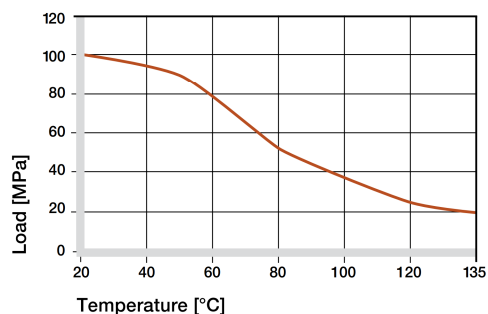


Diagram 02: Recommended maximum surface pressure as a function of temperature (100 MPa at +20 °C)

iglidur® Q is a material used when high pv values are reached with high loads. Diagram 03 shows the elastic deformation of iglidur® Q at radial loads. At the recommended maximum surface pressure of 100 MPa the deformation is less than 3%.

### ► Surface pressure, page 63

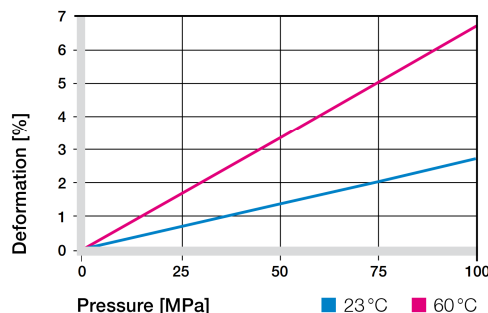


Diagram 03: Deformation under pressure and temperature

### Permissible surface speeds

Under extreme radial loads, the iglidur® Q bearings can reach the maximum pv values, which are possible in the dry operation with plain bearings. Though the iglidur® Q bearings have the greatest advantages with high loads and low speeds, high surface speeds are also attainable due to the excellent coefficients of friction. The values stated in table 03 show the speed at which the temperature rises to the maximum permitted value as a result of friction.

### ► Surface speed, page 65

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	5
Short term	2	1.4	6

Table 03: Maximum surface speeds

### Temperatures

Plain bearings made from iglidur® Q have excellent wear resistance even at high temperatures. At temperatures over +50 °C an additional securing is required. Also, notice that the coefficient of friction increases rapidly as temperature increases from around +100 °C.

### ► Application temperatures, page 66

### ► Additional securing, page 67

### Friction and wear

Although most dry running plastic bearings feature decreasing coefficients of friction with increasing pressure, iglidur® Q goes further than most, under high pressures the material gives excellent low values (diagrams 04 and 05).

### ► Coefficients of friction and surfaces, page 68

### ► Wear resistance, page 69

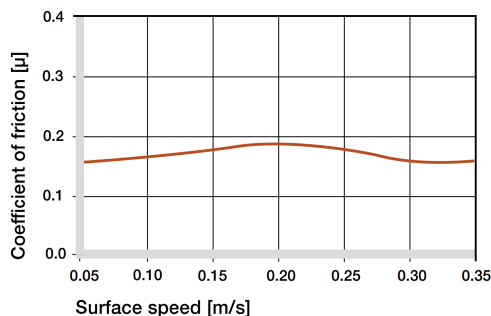


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

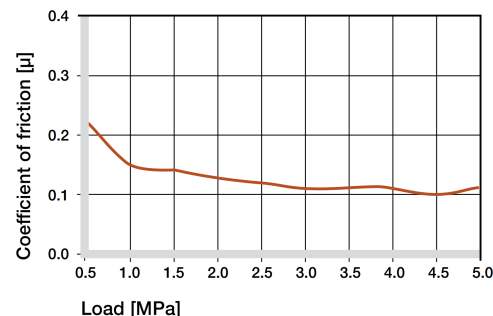


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

### Shaft materials

Diagram 06 displays a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® Q.

The strengths offered by iglidur® heavy duty materials become clear from 30 MPa. iglidur® Q stands out in particular. Other heavy duty materials such as iglidur® Q2 and TX1 only offer the best performances in terms of wear when subjected to even higher loads, iglidur® Q offers strikingly good wear properties on many different shaft materials.

### ► Shaft materials, page 71

iglidur® Q	Dry	Greases	Oil	Water
C. o. f. µ	0.05–0.15	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 µm, 50 HRC)

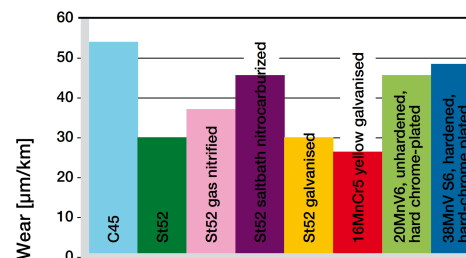


Diagram 06: Wear, pivoting with different shaft materials, pressure p = 30 MPa, v = 0.01 m/s

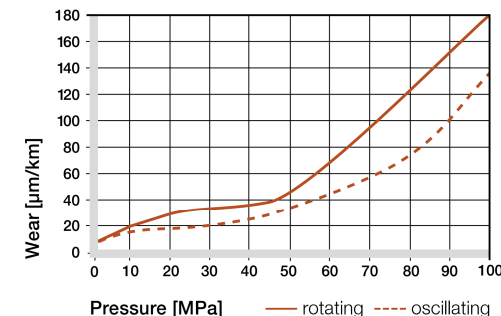


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

### Installation tolerances

iglidur® Q bearings are standard bearings for shafts with h tolerance (recommended minimum h9).

After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances. For specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

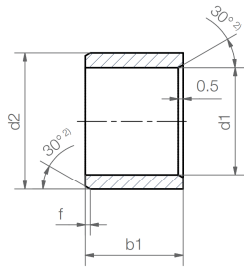
### ► Testing methods, page 75

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® Q E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after pressfit

# iglidur® Q | Product range

## Sleeve bearing (Form S)



<sup>2)</sup> thickness < 1 mm, chamfer = 20°

Chamfer in relation to the d1

d1 [mm]: Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30  
f [mm]: 0.3 | 0.5 | 0.8 | 1.2

### Dimensions [mm]

d1	d1-Tolerance <sup>3)</sup>	d2	b1 h13	Part No.
6.0	+0.020 +0.068	8.0	10.0	<b>QSM-0608-10</b>
8.0	+0.025	10.0	8.0	<b>QSM-0810-08</b>
10.0	+0.083	12.0	10.0	<b>QSM-1012-10</b>
12.0		14.0	10.0	<b>QSM-1214-10</b>
12.0		14.0	20.0	<b>QSM-1214-20</b>
16.0	+0.032	18.0	8.0	<b>QSM-1618-08</b>
16.0	+0.102	18.0	12.5	<b>QSM-1618-12</b>
16.0		18.0	20.0	<b>QSM-1618-20</b>
18.0		20.0	20.0	<b>QSM-1820-20</b>
20.0		22.0	15.0	<b>QSM-2022-15</b>
20.0		23.0	15.0	<b>QSM-2023-15</b>
20.0		23.0	20.0	<b>QSM-2023-20</b>
20.0		23.0	25.0	<b>QSM-2023-25</b>
20.0	+0.040	23.0	30.0	<b>QSM-2023-30</b>
25.0	+0.124	28.0	25.0	<b>QSM-2528-25</b>
25.0		28.0	48.0	<b>QSM-2528-48</b>
30.0		34.0	20.0	<b>QSM-3034-20</b>
30.0		34.0	35.0	<b>QSM-3034-35</b>
30.0		34.0	40.0	<b>QSM-3034-40</b>
35.0	+0.050 +0.150	39.0	15.0	<b>QSM-3539-15</b>

<sup>3)</sup> after pressfit. Testing methods ► Page 75

### Order key

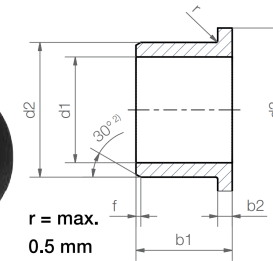
Type	Dimensions
<b>Q S M-0608-10</b>	
iglidur® material	
Form S	
Metric	
Inner-Ø d1 [mm]	
Outer-Ø d2 [mm]	
Length b1 [mm]	

**i** Dimensions according to ISO 3547-1 and special dimensions

d1	d1-Tolerance <sup>3)</sup>	d2	b1 h13	Part No.
35.0		39.0	30.0	<b>QSM-3539-30</b>
35.0		39.0	35.0	<b>QSM-3539-35</b>
35.0		39.0	50.0	<b>QSM-3539-50</b>
40.0		44.0	30.0	<b>QSM-4044-30</b>
40.0		44.0	40.0	<b>QSM-4044-40</b>
40.0	+0.050	44.0	47.0	<b>QSM-4044-47</b>
40.0	+0.150	50.0	25.2	<b>QSM-4550-252</b>
45.0		50.0	50.0	<b>QSM-4550-50</b>
50.0		55.0	50.0	<b>QSM-5055-50</b>
50.0		55.0	60.0	<b>QSM-5055-60</b>
50.0		55.0	80.0	<b>QSM-5055-80</b>
55.0		60.0	50.0	<b>QSM-5560-50</b>
60.0		65.0	50.0	<b>QSM-6065-50</b>
65.0	+0.060	70.0	34.0	<b>QSM-6570-34</b>
70.0	+0.180	75.0	50.0	<b>QSM-7075-50</b>
75.0		80.0	40.0	<b>QSM-7580-40</b>
80.0		85.0	60.0	<b>QSM-8085-60</b>
90.0	+0.072 +0.212	95.0	50.0	<b>QSM-9095-50</b>

# iglidur® Q | Product range

## Flange bearing (Form F)



<sup>2)</sup> thickness < 1 mm, chamfer = 20°

Chamfer in relation to the d1

d1 [mm]: Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30  
f [mm]: 0.3 | 0.5 | 0.8 | 1.2

### Dimensions [mm]

d1	d1-Tolerance <sup>3)</sup>	d2	d3 d13	b1 h13	b2 -0.14	Part No.
6.0	+0.020	8.0	12.0	3.0	1.0	<b>QFM-0608-03</b>
6.0	+0.068	8.0	12.0	4.0	1.0	<b>QFM-0608-04</b>
8.0		10.0	15.0	5.5	1.0	<b>QFM-0810-05</b>
8.0		10.0	15.0	6.0	1.0	<b>QFM-0810-06</b>
10.0	+0.025	12.0	18.0	6.0	1.0	<b>QFM-1012-06</b>
10.0	+0.083	12.0	18.0	10.0	1.0	<b>QFM-1012-10</b>
10.0		12.0	15.0	3.5	1.0	<b>QFM-101215-035</b>
10.0		12.0	15.0	8.0	1.0	<b>QFM-101215-08</b>
12.0		14.0	20.0	8.0	1.0	<b>QFM-1214-08</b>
12.0		14.0	20.0	12.0	1.0	<b>QFM-1214-12</b>
12.0		14.0	20.0	20.0	1.0	<b>QFM-1214-20</b>
14.0	+0.032	16.0	22.0	12.0	1.0	<b>QFM-1416-12</b>
16.0	+0.102	18.0	24.0	17.0	1.0	<b>QFM-1618-17</b>
18.0		20.0	26.0	12.0	1.0	<b>QFM-1820-12</b>
18.0		20.0	26.0	5.0	1.0	<b>QFM-182026-051</b>

<sup>3)</sup> after pressfit. Testing methods ► Page 75

### Order key

Type	Dimensions
<b>Q F M-0608-03</b>	
iglidur® material	
Form F	
Metric	
Inner-Ø d1 [mm]	
Outer-Ø d2 [mm]	
Length b1 [mm]	

**i** Dimensions according to ISO 3547-1 and special dimensions

d1	d1-Tolerance <sup>3)</sup>	d2	d3 d13	b1 h13	b2 -0.14	Part No.
20.0		23.0	30.0	21.5	1.5	<b>QFM-2023-21</b>
25.0	+0.040	28.0	35.0	21.5	1.5	<b>QFM-2528-21</b>
26.0	+0.124	29.0	35.0	5.0	1.5	<b>QFM-2629-05</b>
27.0		30.0	38.0	20.0	1.5	<b>QFM-2730-20</b>
30.0		34.0	42.0	37.0	2.0	<b>QFM-3034-37</b>
35.0		39.0	47.0	26.0	2.0	<b>QFM-3539-26</b>
35.0		39.0	50.0	35.0	2.0	<b>QFM-353950-35</b>
40.0	+0.050	44.0	52.0	14.0	2.0	<b>QFM-4044-14</b>
40.0	+0.150	44.0	52.0	40.0	2.0	<b>QFM-4044-40</b>
50.0		55.0	63.0	10.0	2.0	<b>QFM-5055-10</b>
50.0		55.0	63.0	50.0	2.0	<b>QFM-5055-50</b>
60.0	+0.060	65.0	78.0	50.0	2.0	<b>QFM-6065-50</b>
70.0	+0.180	75.0	83.0	50.0	2.0	<b>QFM-7075-50</b>

### **i** Don't find your size?

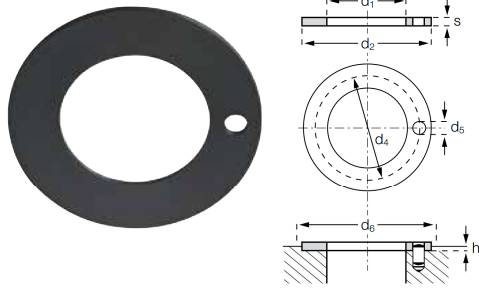
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution in a very short time.

### **?o** Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

► [www.igus.eu/iglidur-specialbearings](http://www.igus.eu/iglidur-specialbearings)





Order key

Type	Dimensions
Q T M -2842-015	
iglidur® material	
Form T	
Metric	
Inner-Ø d1 [mm]	
Outer-Ø d2 [mm]	
Thickness s [mm]	



Dimensions according to ISO 3547-1  
and special dimensions

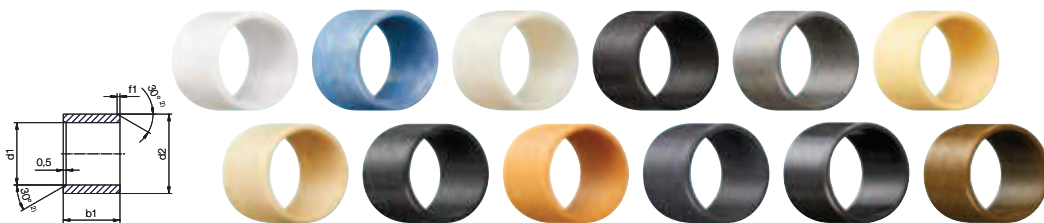
## Dimensions [mm]

d1	d2	s	d4	d5	h	d6	Part No.
+0.3	-0.3	-0.06	-0.12/+0.12	-0.375/+0.125	+0.2/-0.2	+0.12	
28.0	42.0	1.5	35.0	4.0	1.0	42.0	QTM-2842-015
32.0	54.0	1.5	43.0	4.0	1.0	54.0	QTM-3254-015



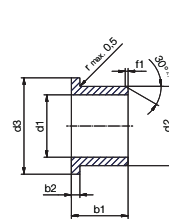
## For extreme loads – iglidur® Q2

- Wear resistant and dimensionally stable at high loads
- Good price/performance ratio
- Lubrication and maintenance free
- Standard range from stock



Dimensions sleeve Abmessungen zylindrisch [mm]

Part No. Art.-Nr.	d1	d1 tolerance d1-Toleranz	d2	b1 h13
A180SM-0810-15	8.0	+0.025 +0.083	10.0	15.0
A350SM-1416-12	14.0	+0.016 +0.068	16.0	12.0
C500SM-3034-30	30.0	+0.020 +0.104	34.0	30.0
F2SM-1214-15	12.0	+0.032 +0.102	14.0	15.0
F2SM-1618-20	16.0	+0.032 +0.102	18.0	20.0
GSM-0406-06	4.0	+0.020 +0.068	6.0	6.0
GSM-0810-36	8.0	+0.025 +0.083	10.0	36.0
GSM-120125-78	120.0	+0.072 +0.212	125.0	78.0
GSM-1214-45	12.0	+0.032 +0.102	14.0	45.0
GSM-1820-30	18.0	+0.032 +0.102	20.0	30.0
GSM-1822-15	18.0	+0.032 +0.102	22.0	15.0
GSM-2021-095	20.0	+0.020 +0.072	21.0	9.5
JSM-0814-08	8.0	+0.040 +0.130	14.0	8.0
JSM-1216-06	12.0	+0.050 +0.0160	16.0	6.0
JSM-1218-10	12.0	+0.050 +0.0160	18.0	10.0
JSM-1315-06	13.0	+0.050 +0.0160	15.0	6.0
JSM-1620-20	16.0	+0.050 +0.0160	20.0	20.0
JSM-6065-100	60.0	+0.060 +0.180	65.0	100.0
MSM-1620-10	16.0	+0.050 +0.0160	20.0	10.0
P210SM-1214-04	12.0	+0.032 +0.102	14.0	4.0
PSM-0608-05	6.0	+0.020 +0.068	8.0	5.0
PSM-0812-10	8.0	+0.040 +0.130	12.0	10.0
PSM-3236-15	32.0	+0.050 +0.150	36.0	15.0
Q2SM-1012-04	10.0	+0.025 +0.083	12.0	4.0
Q2SM-4246-52	42.0	+0.050 +0.150	46.0	52.0
X6SM-1416-22	14.0	+0.016 +0.086	16.0	22.0
X6SM-1618-12	16.0	+0.016 +0.086	18.0	12.0
X6SM-2023-15	20.0	+0.020 +0.104	23.0	15.0
ZSM-2225-35	22.0	+0.020 +0.104	25.0	35.0
ZSM-6065-25	60.0	+0.030 +0.150	65.0	25.0
ZSM-9095-100	90.0	+0.036 +0.176	95.0	100.0



Dimensions with flange Abmessungen mit Bund [mm]

Part No. Art.-Nr.	d1	d1 tolerance d1-Toleranz	d2	d3	b1 h13	b2
GFM-060710-06	6.0	+0.010 +0.040	7.0	10.0	6.0	0.5
GFM-0812-16	8.0	+0.040 +0.130	12.0	16.0	16.0	2.0
GFM-101115-03	10.0	+0.013 +0.046	11.0	15.0	3.0	1.0
GFM-1012-11	10.0	+0.025 +0.083	12.0	18.0	11.0	1.0
GFM-1012-25	10.0	+0.025 +0.083	12.0	18.0	25.0	1.0
GFM-1719-07	17.0	+0.032 +0.102	19.0	25.0	7.0	1.0
GFM-2527-12	25.0	+0.040 +0.124	27.0	32.0	12.0	1.0
GFM-2527-15	25.0	+0.040 +0.124	27.0	32.0	15.0	1.0
GFM-3034-12	30.0	+0.040 +0.124	34.0	42.0	12.0	2.0
GFM-303440-07	30.0	+0.040 +0.124	34.0	40.0	7.0	2.0
H1FM-0405-06	4.0	+0.010 +0.058	5.5	9.5	6.0	0.8
J350FM-6065-50	60.0	+0.030 +0.150	65.0	73.0	50.0	2.0
J3FM-081418-15	8.0	+0.025 +0.083	14.0	18.0	15.0	2.0
JFM-040810-15	4.0	+0.020 +0.068	8.0	10.0	15.0	2.0
JFM-0810-03	8.0	+0.025 +0.083	10.0	15.0	3.0	1.0
JFM-121419-06	12.0	+0.032 +0.102	14.0	19.0	6.0	1.0
JFM-121622-20	12.0	+0.050 +0.0160	16.0	22.0	20.0	2.0
JFM-2023-07	20.0	+0.040 +0.124	23.0	30.0	7.0	1.5
PFM-1214-08	12.0	+0.032 +0.102	14.0	8.0	20.0	1.0
PFM-1618-08	16.0	+0.032 +0.102	18.0	8.0	24.0	1.0
P210FM-0405-06	4.0	+0.020 +0.068	5.5	9.5	6.0	0.8
Q290FM-8085-100	80.0	+0.060 +0.180	85.0	93.0	100.0	2.5
Q2FM-101219-13	10.0	+0.025 +0.083	12.0	19.0	13.0	1.0
Q2FM-1013-05	10.0	+0.025 +0.083	13.0	20.0	5.0	1.0
Q2FM-2023-07	20.0	+0.040 +0.124	23.0	30.0	7.0	1.5
QFM-101215-04	10.0	+0.025 +0.083	12.0	15.0	4.0	1.0
QFM-121418-06	12.0	+0.032 +0.102	14.0	18.0	6.0	1.0
WFM-2023-08	20.0	+0.040 +0.124	23.0	30.0	8.0	1.5
XFM-1214-50	12.0	+0.016 +0.086	14.0	50.0	20.0	1.0
X6FM-0608-04	6.0	+0.010 +0.058	8.0	12.0	4.0	1.0
ZFM-1012-25	10.0	+0.013 +0.071	12.0	18.0	25.0	1.0
ZFM-2023-075	20.0	+0.020 +0.104	23.0	30.0	7.5	1.5

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