

# Technical Data Sheet

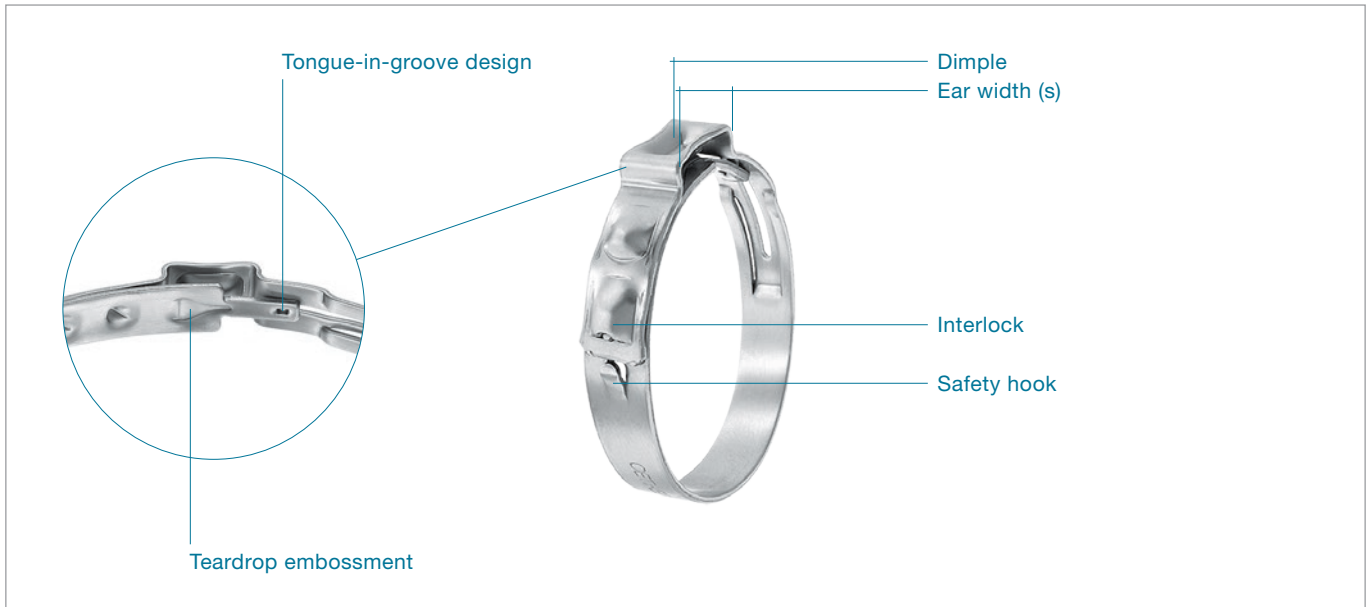
## Stepless® Ear Clamps

### Product Group 123 & 193

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Connecting Technology



360° Stepless®: uniform compression and uniform surface pressure

Closed interlock: high radial loads, smooth outer contour

Teardrop embossment: higher radial loads with compressible materials

Clamp ear: compensates for component tolerances, adjustable surface pressure

Dimple: increased clamping force Burr-free strip edges: reduced risk of damage to parts being clamped

Security hook: prevents unintended opening during transport

## Stepless® Ear Clamps – the next generation Product Group 123 & 193

### Material

PG 123 High strength steel, material no. 1.0934

Coating: zinc-plated, galfan optional

PG 193 Stainless steel, material no. 1.4301/UNS S30400

### Corrosion resistance according to DIN EN ISO 9227

PG 123 Zinc-plated steel band ≥ 96 h

PG 123 Galvanized steel band ≥ 144 h

PG 193 ≥ 1000 h

### Standard Series

Size range	width x thickness	ear width
18.0 – 120.5 mm*	7 x 0.6 mm*	10.7 mm
30.0 – 120.5 mm*	7 x 0.6 mm*	13.0 mm
18.0 – 120.5 mm	7 x 0.8 mm	10.7 mm
30.0 – 120.5 mm	7 x 0.8 mm	13.0 mm

### Heavy Duty Series

Size range	width x thickness	ear width
24.5 – 120.5 mm	10 x 0.8 mm	10.7 mm
30.0 – 120.5 mm	10 x 0.8 mm	13.0 mm
24.5 – 120.5 mm**	10 x 1.0 mm	10.7 mm
30.0 – 120.5 mm	10 x 1.0 mm	13.0 mm

\* stainless steel available only

\*\* stainless steel material size range starts at 30.0 mm

### Sizes

Diameter graduation 0.5 mm

From diameter 30.0 mm the clamps are also available with 13 mm ear

### Material thickness

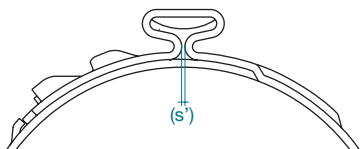
The infinitely adjustable ear clamps are available in standard widths and thicknesses. The band dimensions must be selected so that they take the required radial forces and the hose characteristics into account and secure the necessary sealing and / or retention properties for the corresponding environmental conditions.

### Clamp ear (closing element)

Using tools designed or endorsed by Oetiker, the clamp is closed by drawing together the lower radii of the “ear”. The maximum diameter reduction is proportionate to the open “ear” width (s). The theoretical maximum reduction in diameter is given by the formula:

$$\text{Max. diameter reduction} = \frac{\text{Ear width (s)}}{\pi}$$

The data in this catalog are based on many years experience. They are intended for reference, not as design specifications.



Note: the above sketch shows the appearance of a closed “ear” (s’); it does not necessarily indicate an effective closed assembly.

The following applies as a guideline: To determine the correct clamp diameter, push the hose onto the attaching material, (e.g. the nipple), and then measure the outer diameter of the hose. The value of the outer diameter must be slightly above the average value of the diameter range of the clamp to be selected. The clamp is only sufficiently closed (minimal diameter reduction) if the original ear width is reduced by at least 40% (for an ear with a 10.7 mm width) or 50% (for an ear with a 13 mm width) and the correct closing force was applied during assembly.

#### Block closure

Block closure means that, during the applied closing force, both ear shanks of one ear clamp touch each other. The closing force applied after the occurrence of block closure is absorbed by the block closure and not transferred to the parts being clamped. If a statement about the effective closing force acting on the parts being clamped during closure is required, a block closure should be avoided.

#### Security hook

The standard series will be delivered with security hook. Optionally the clamps can be ordered without security hook.

#### Assembly Recommendations

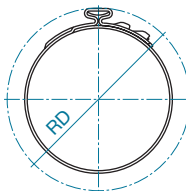
The “clamp ear” should be closed with a recommended and uniform closing force – force priority. This ensures that the tension loading of the strip material remains constant without overloading individual components, parts to be joined, and clamps. The force priority assembly ensures that the tolerance compensation remains functional during every closure and the radial forces each remain approximately the same, based on the resulting mass of the ear gap, which changes depending on the component tolerances. This significantly reduces the influence of the roundness and the resulting radial force distribution. If the “Oetiker ELC electronically controlled pneumatic pincers” are used, comprehensive process monitoring must be guaranteed including 100% documentation.

#### Closing force

As a matter of principle, the closing force selection is closely related to the desired compression or surface pressure of the material to be assembled. The resistance against the clamp corresponds to the applied force, so that the defined closing force is significantly reduced if soft materials are compressed. The maximum closing forces are displayed in the table below, depending on the material dimension. These specifically refer to thermoplastics or other less malleable materials with high Shore hardness.

#### Rotation diameter

The rotation diameter (RD) of an assembled clamp can be critical design information for applications which require a rotation within a limited open space. It changes, depending on the resulting ear gap. Clamping attempts yield the maximum rotation diameter of the respective component.



#### Important

- The ear height is naturally given. Do not influence the ear height, either by changing the ear gap or with built-in hold-down devices in installation tools.
- Single tool stroke closure only, do not apply secondary crimping force.

## Installation data

Material dimensions (mm)	Size (mm)	Ear width (mm)	Closing force max. (N)	Installation tools force-monitored <sup>1</sup> :			
				Manual	Pneumatic	Cordless	Electronically controlled
<b>PG 123</b>							
7 x 0.8	18.0 – 120.5	10.7	2400	HMK 01/S01	HO ME 3000 – 4000	CP 01	HO EL 3000 – 4000
7 x 0.8	30.0 – 120.5	13.0	2400	HMK 01/S01	HO ME 3000 – 4000	CP 01	HO EL 3000 – 4000
10 x 0.8	24.5 – 120.5	10.7	3400	-	HO ME 5000	CP 01	HO EL 5000
10 x 0.8	30.0 – 120.5	13.0	3400	-	HO ME 5000	CP 01	HO EL 5000
10 x 1.0	24.5 – 120.5	10.7	5000	Clamping tool and Torque wrench	HO ME 5000 – 7000	CP 02	HO EL 5000 – 7000
10 x 1.0	30.0 – 120.5	13.0	5000	Clamping tool and Torque wrench	HO ME 5000 – 7000	CP 02	HO EL 5000 – 7000
<b>PG 193</b>							
7 x 0.6	18.0 – 120.5	10.7	2800	-	HO ME 3000 – 4000	CP 01	HO EL 3000 – 4000
7 x 0.6	30.0 – 120.5	13.0	2600	HMK 01	HO ME 3000 – 4000	CP 01	HO EL 3000 – 4000
7 x 0.8	18.0 – 120.5	10.7	4300	Clamping tool and Torque wrench	HO ME 5000	CP 02	HO EL 5000
7 x 0.8	30.0 – 120.5	13.0	4100	Clamping tool and Torque wrench	HO ME 5000	CP 02	HO EL 5000
10 x 0.8	24.5 – 120.5	10.7	5600	Clamping tool and Torque wrench	HO ME 7000	CP 02	HO EL 7000
10 x 0.8	30.0 – 120.5	13.0	5400	Clamping tool and Torque wrench	HO ME 7000	CP 02	HO EL 7000
10 x 1.0	30.0 – 120.5	10.7	8000 <sup>2</sup>	Clamping tool and Torque wrench	HO ME 7000	CP 02	HO EL 7000
10 x 1.0	30.0 – 120.5	13.0	7700 <sup>2</sup>	Clamping tool and Torque wrench	HO ME 7000	CP 02	HO EL 7000

For an alternative option, see our manual pincers on page 104

<sup>1</sup> Further information on page 84

<sup>2</sup> For closing forces  $\geq 7000$  N, with the HO 7000, an inlet pressure of  $> 5.5$  bar is required.

**Important note**

These figures are intended as a guide, they may vary depending on the type and tolerances of parts being clamped. To ensure optimum clamp selection, we recommend making functional tests with several assemblies.

## Order information PG 123

Item No.	Ref. No.	Ear width inside (mm)	Size range (mm)	Item No.	Ref. No.	Ear width inside (mm)	Size range (mm)
High strength steel, coating: zinc-plated Band width 7 mm, thickness 0.8 mm (708)				High strength steel, coating: zinc-plated Band width 7 mm, thickness 0.8 mm (708)			
12300898	018.0-708	10.7	14.6 – 18	12300680	045.5-708	10.7	42.1 – 45.5
12300899	018.5-708	10.7	15.1 – 18.5	12300681	046.0-708	10.7	42.6 – 46
12300900	019.0-708	10.7	15.6 – 19	12300682	046.5-708	10.7	43.1 – 46.5
12300901	019.5-708	10.7	16.1 – 19.5	12300683	047.0-708	10.7	43.6 – 47
12300902	020.0-708	10.7	16.6 – 20	12300684	047.5-708	10.7	44.1 – 47.5
12300903	020.5-708	10.7	17.1 – 20.5	12300685	048.0-708	10.7	44.6 – 48
12300841	021.0-708	10.7	17.6 – 21	12300686	048.5-708	10.7	45.1 – 48.5
12300904	021.5-708	10.7	18.1 – 21.5	12300687	049.0-708	10.7	45.6 – 49
12300905	022.0-708	10.7	18.6 – 22	12300688	049.5-708	10.7	46.1 – 49.5
12300842	022.5-708	10.7	19.1 – 22.5	12300689	050.0-708	10.7	46.6 – 50
12300906	023.0-708	10.7	19.6 – 23	12300690	050.5-708	10.7	47.1 – 50.5
12300907	023.5-708	10.7	20.1 – 23.5	12300691	051.0-708	10.7	47.6 – 51
12300908	024.0-708	10.7	20.6 – 24	12300632	051.5-708	10.7	48.1 – 51.5
12300909	024.5-708	10.7	21.1 – 24.5	12300692	052.0-708	10.7	48.6 – 52
12300589	025.0-708	10.7	21.6 – 25	12300693	052.5-708	10.7	49.1 – 52.5
12300642	025.5-708	10.7	22.1 – 25.5	12300694	053.0-708	10.7	49.6 – 53
12300643	026.0-708	10.7	22.6 – 26	12300695	053.5-708	10.7	50.1 – 53.5
12300644	026.5-708	10.7	23.1 – 26.5	12300696	054.0-708	10.7	50.6 – 54
12300645	027.0-708	10.7	23.6 – 27	12300697	054.5-708	10.7	51.1 – 54.5
12300646	027.5-708	10.7	24.1 – 27.5	12300698	055.0-708	10.7	51.6 – 55
12300647	028.0-708	10.7	24.6 – 28	12300699	055.5-708	10.7	52.1 – 55.5
12300648	028.5-708	10.7	25.1 – 28.5	12300700	056.0-708	10.7	52.6 – 56
12300649	029.0-708	10.7	25.6 – 29	12300701	056.5-708	10.7	53.1 – 56.5
12300650	029.5-708	10.7	26.1 – 29.5	12300702	057.0-708	10.7	53.6 – 57
12300590	030.0-708	10.7	26.6 – 30	12300703	057.5-708	10.7	54.1 – 57.5
12300651	030.5-708	10.7	27.1 – 30.5	12300704	058.0-708	10.7	54.6 – 58
12300652	031.0-708	10.7	27.6 – 31	12300705	058.5-708	10.7	55.1 – 58.5
12300653	031.5-708	10.7	28.1 – 31.5	12300706	059.0-708	10.7	55.6 – 59
12300654	032.0-708	10.7	28.6 – 32	12300707	059.5-708	10.7	56.1 – 59.5
12300655	032.5-708	10.7	29.1 – 32.5	12300591	060.0-708	10.7	56.6 – 60
12300627	033.0-708	10.7	29.6 – 33	12300708	060.5-708	10.7	57.1 – 60.5
12300656	033.5-708	10.7	30.1 – 33.5	12300709	061.0-708	10.7	57.6 – 61
12300657	034.0-708	10.7	30.6 – 34	12300710	061.5-708	10.7	58.1 – 61.5
12300658	034.5-708	10.7	31.1 – 34.5	12300711	062.0-708	10.7	58.6 – 62
12300659	035.0-708	10.7	31.6 – 35	12300712	062.5-708	10.7	59.1 – 62.5
12300660	035.5-708	10.7	32.1 – 35.5	12300713	063.0-708	10.7	59.6 – 63
12300661	036.0-708	10.7	32.6 – 36	12300714	063.5-708	10.7	60.1 – 63.5
12300662	036.5-708	10.7	33.1 – 36.5	12300715	064.0-708	10.7	60.6 – 64
12300663	037.0-708	10.7	33.6 – 37	12300716	064.5-708	10.7	61.1 – 64.5
12300664	037.5-708	10.7	34.1 – 37.5	12300717	065.0-708	10.7	61.6 – 65
12300665	038.0-708	10.7	34.6 – 38	12300718	065.5-708	10.7	62.1 – 65.5
12300666	038.5-708	10.7	35.1 – 38.5	12300719	066.0-708	10.7	62.6 – 66
12300641	039.0-708	10.7	35.6 – 39	12300720	066.5-708	10.7	63.1 – 66.5
12300668	039.5-708	10.7	36.1 – 39.5	12300721	067.0-708	10.7	63.6 – 67
12300669	040.0-708	10.7	36.6 – 40	12300722	067.5-708	10.7	64.1 – 67.5
12300670	040.5-708	10.7	37.1 – 40.5	12300723	068.0-708	10.7	64.6 – 68
12300671	041.0-708	10.7	37.6 – 41	12300724	068.5-708	10.7	65.1 – 68.5
12300672	041.5-708	10.7	38.1 – 41.5	12300725	069.0-708	10.7	65.6 – 69
12300673	042.0-708	10.7	38.6 – 42	12300726	069.5-708	10.7	66.1 – 69.5
12300674	042.5-708	10.7	39.1 – 42.5	12300727	070.0-708	10.7	66.6 – 70
12300675	043.0-708	10.7	39.6 – 43	12300728	070.5-708	10.7	67.1 – 70.5
12300676	043.5-708	10.7	40.1 – 43.5	12300729	071.0-708	10.7	67.6 – 71
12300677	044.0-708	10.7	40.6 – 44	12300730	071.5-708	10.7	68.1 – 71.5
12300678	044.5-708	10.7	41.1 – 44.5	12300731	072.0-708	10.7	68.6 – 72
12300679	045.0-708	10.7	41.6 – 45	12300732	072.5-708	10.7	69.1 – 72.5

## Order information PG 123

Item No. Ref. No. Ear width inside (mm) Size range (mm)

High strength steel, coating: zinc-plated  
Band width 7 mm, thickness 0.8 mm (708)

12300733	073.0-708	10.7	69.6 – 73
12300734	073.5-708	10.7	70.1 – 73.5
12300735	074.0-708	10.7	70.6 – 74
12300736	074.5-708	10.7	71.1 – 74.5
12300743	078.0-708	10.7	74.6 – 78
12300744	078.5-708	10.7	75.1 – 78.5
12300745	079.0-708	10.7	75.6 – 79
12300746	079.5-708	10.7	76.1 – 79.5
12300747	080.0-708	10.7	76.6 – 80
12300748	080.5-708	10.7	77.1 – 80.5
12300749	081.0-708	10.7	77.6 – 81
12300750	081.5-708	10.7	78.1 – 81.5
12300751	082.0-708	10.7	78.6 – 82
12300752	082.5-708	10.7	79.1 – 82.5
12300753	083.0-708	10.7	79.6 – 83
12300754	083.5-708	10.7	80.1 – 83.5
12300755	084.0-708	10.7	80.6 – 84
12300756	084.5-708	10.7	81.1 – 84.5
12300757	085.0-708	10.7	81.6 – 85
12300758	085.5-708	10.7	82.1 – 85.5
12300759	086.0-708	10.7	82.6 – 86
12300760	086.5-708	10.7	83.1 – 86.5
12300761	087.0-708	10.7	83.6 – 87
12300762	087.5-708	10.7	84.1 – 87.5
12300763	088.0-708	10.7	84.6 – 88
12300764	088.5-708	10.7	85.1 – 88.5
12300765	089.0-708	10.7	85.6 – 89
12300766	089.5-708	10.7	86.1 – 89.5
12300767	090.0-708	10.7	86.6 – 90
12300768	090.5-708	10.7	87.1 – 90.5
12300769	091.0-708	10.7	87.6 – 91
12300770	091.5-708	10.7	88.1 – 91.5
12300771	092.0-708	10.7	88.6 – 92
12300772	092.5-708	10.7	89.1 – 92.5
12300773	093.0-708	10.7	89.6 – 93
12300774	093.5-708	10.7	90.1 – 93.5
12300775	094.0-708	10.7	90.6 – 94
12300776	094.5-708	10.7	91.1 – 94.5
12300777	095.0-708	10.7	91.6 – 95
12300778	095.5-708	10.7	92.1 – 95.5
12300779	096.0-708	10.7	92.6 – 96
12300780	096.5-708	10.7	93.1 – 96.5
12300781	097.0-708	10.7	93.6 – 97
12300782	097.5-708	10.7	94.1 – 97.5
12300783	098.0-708	10.7	94.6 – 98
12300784	098.5-708	10.7	95.1 – 98.5
12300785	099.0-708	10.7	95.6 – 99
12300786	099.5-708	10.7	96.1 – 99.5
12300787	100.0-708	10.7	96.6 – 100
12300788	100.5-708	10.7	97.1 – 100.5
12300789	101.0-708	10.7	97.6 – 101
12300790	101.5-708	10.7	98.1 – 101.5
12300791	102.0-708	10.7	98.6 – 102
12300792	102.5-708	10.7	99.1 – 102.5
12300793	103.0-708	10.7	99.6 – 103

Item No. Ref. No. Ear width inside (mm) Size range (mm)

High strength steel, coating: zinc-plated  
Band width 7 mm, thickness 0.8 mm (708)

12300794	103.5-708	10.7	100.1 – 103.5
12300795	104.0-708	10.7	100.6 – 104
12300796	104.5-708	10.7	101.1 – 104.5
12300797	105.0-708	10.7	101.6 – 105
12300798	105.5-708	10.7	102.1 – 105.5
12300799	106.0-708	10.7	102.6 – 106
12300800	106.5-708	10.7	103.1 – 106.5
12300801	107.0-708	10.7	103.6 – 107
12300802	107.5-708	10.7	104.1 – 107.5
12300803	108.0-708	10.7	104.6 – 108
12300804	108.5-708	10.7	105.1 – 108.5
12300805	109.0-708	10.7	105.6 – 109
12300806	109.5-708	10.7	106.1 – 109.5
12300807	110.0-708	10.7	106.6 – 110
12300808	110.5-708	10.7	107.1 – 110.5
12300809	111.0-708	10.7	107.6 – 111
12300810	111.5-708	10.7	108.1 – 111.5
12300811	112.0-708	10.7	108.6 – 112
12300812	112.5-708	10.7	109.1 – 112.5
12300813	113.0-708	10.7	109.6 – 113
12300814	113.5-708	10.7	110.1 – 113.5
12300815	114.0-708	10.7	110.6 – 114
12300816	114.5-708	10.7	111.1 – 114.5
12300817	115.0-708	10.7	111.6 – 115
12300818	115.5-708	10.7	112.1 – 115.5
12300819	116.0-708	10.7	112.6 – 116
12300820	116.5-708	10.7	113.1 – 116.5
12300821	117.0-708	10.7	113.6 – 117
12300822	117.5-708	10.7	114.1 – 117.5
12300823	118.0-708	10.7	114.6 – 118
12300824	118.5-708	10.7	115.1 – 118.5
12300825	119.0-708	10.7	115.6 – 119
12300826	119.5-708	10.7	116.1 – 119.5
12300827	120.0-708	10.7	116.6 – 120
12300592	120.5-708	10.7	117.1 – 120.5

Available on request  
(Diameter graduation 0.5 mm)

Item No. Ref. No. Ear width inside (mm) Size range (mm)

Band width 7 mm, thickness 0.8 mm (708)

On request 13 30.0 ... 120.5

Band width 10 mm, thickness 0.8 mm (1008)

On request 10.7 24.5 ... 120.5

On request 13 30.0 ... 120.5

Band width 10 mm, thickness 1.0 mm (1010)

On request 10.7 24.5 ... 120.5

On request 13 30.0 ... 120.5

The data in this catalog are based on many years experience. They are intended for reference, not as design specifications.

## Order information PG 193

Item No.	Ref. No.	Ear width inside (mm)	Size range (mm)	Item No.	Ref. No.	Ear width inside (mm)	Size range (mm)
Band width 7 mm, thickness 0.6 mm (706R)				Band width 7 mm, thickness 0.6 mm (706R)			
19300111	018.0-706R	10.7	14.6 – 18	19300525	045.5-706R	10.7	42.1 – 45.5
19300838	018.5-706R	10.7	15.1 – 18.5	19300526	046.0-706R	10.7	42.6 – 46
19300916	019.0-706R	10.7	15.6 – 19	19300527	046.5-706R	10.7	43.1 – 46.5
19300917	019.5-706R	10.7	16.1 – 19.5	19300528	047.0-706R	10.7	43.6 – 47
19300373	020.0-706R	10.7	16.6 – 20	19300529	047.5-706R	10.7	44.1 – 47.5
19300776	020.5-706R	10.7	17.1 – 20.5	19300530	048.0-706R	10.7	44.6 – 48
19300778	021.0-706R	10.7	17.6 – 21	19300531	048.5-706R	10.7	45.1 – 48.5
19300918	021.5-706R	10.7	18.1 – 21.5	19300532	049.0-706R	10.7	45.6 – 49
19300853	022.0-706R	10.7	18.6 – 22	19300533	049.5-706R	10.7	46.1 – 49.5
19300105	022.5-706R	10.7	19.1 – 22.5	19300534	050.0-706R	10.7	46.6 – 50
19300919	023.0-706R	10.7	19.6 – 23	19300535	050.5-706R	10.7	47.1 – 50.5
19300823	023.5-706R	10.7	20.1 – 23.5	19300536	051.0-706R	10.7	47.6 – 51
19300900	024.0-706R	10.7	20.6 – 24	19300537	051.5-706R	10.7	48.1 – 51.5
19300765	024.5-706R	10.7	21.1 – 24.5	19300538	052.0-706R	10.7	48.6 – 52
19300705	024.9-706R	10.7	21.5 – 24.9	19300539	052.5-706R	10.7	49.1 – 52.5
19300116	025.0-706R	10.7	21.6 – 25	19300540	053.0-706R	10.7	49.6 – 53
19300487	025.5-706R	10.7	22.1 – 25.5	19300541	053.5-706R	10.7	50.1 – 53.5
19300488	026.0-706R	10.7	22.6 – 26	19300542	054.0-706R	10.7	50.6 – 54
19300489	026.5-706R	10.7	23.1 – 26.5	19300543	054.5-706R	10.7	51.1 – 54.5
19300368	027.0-706R	10.7	23.6 – 27	19300544	055.0-706R	10.7	51.6 – 55
19300491	027.5-706R	10.7	24.1 – 27.5	19300545	055.5-706R	10.7	52.1 – 55.5
19300492	028.0-706R	10.7	24.6 – 28	19300546	056.0-706R	10.7	52.6 – 56
19300493	028.5-706R	10.7	25.1 – 28.5	19300547	056.5-706R	10.7	53.1 – 56.5
19300494	029.0-706R	10.7	25.6 – 29	19300548	057.0-706R	10.7	53.6 – 57
19300495	029.5-706R	10.7	26.1 – 29.5	19300549	057.5-706R	10.7	54.1 – 57.5
19300354	030.0-706R	10.7	26.6 – 30	19300550	058.0-706R	10.7	54.6 – 58
19300497	030.5-706R	10.7	27.1 – 30.5	19300551	058.5-706R	10.7	55.1 – 58.5
19300498	031.0-706R	10.7	27.6 – 31	19300552	059.0-706R	10.7	55.6 – 59
19300472	031.5-706R	10.7	28.1 – 31.5	19300553	059.5-706R	10.7	56.1 – 59.5
19300500	032.0-706R	10.7	28.6 – 32	19300114	060.0-706R	10.7	56.6 – 60
19300501	032.5-706R	10.7	29.1 – 32.5	19300490	060.5-706R	10.7	57.1 – 60.5
19300502	033.0-706R	10.7	29.6 – 33	19300496	061.0-706R	10.7	57.6 – 61
19300503	033.5-706R	10.7	30.1 – 33.5	19300499	061.5-706R	10.7	58.1 – 61.5
19300504	034.0-706R	10.7	30.6 – 34	19300554	062.0-706R	10.7	58.6 – 62
19300505	034.5-706R	10.7	31.1 – 34.5	19300555	062.5-706R	10.7	59.1 – 62.5
19300506	035.0-706R	10.7	31.6 – 35	19300556	063.0-706R	10.7	59.6 – 63
19300507	035.5-706R	10.7	32.1 – 35.5	19300557	063.5-706R	10.7	60.1 – 63.5
19300508	036.0-706R	10.7	32.6 – 36	19300558	064.0-706R	10.7	60.6 – 64
19300509	036.5-706R	10.7	33.1 – 36.5	19300559	064.5-706R	10.7	61.1 – 64.5
19300510	037.0-706R	10.7	33.6 – 37	19300560	065.0-706R	10.7	61.6 – 65
19300511	037.5-706R	10.7	34.1 – 37.5	19300561	065.5-706R	10.7	62.1 – 65.5
19300512	038.0-706R	10.7	34.6 – 38	19300562	066.0-706R	10.7	62.6 – 66
19300513	038.5-706R	10.7	35.1 – 38.5	19300563	066.5-706R	10.7	63.1 – 66.5
19300514	039.0-706R	10.7	35.6 – 39	19300564	067.0-706R	10.7	63.6 – 67
19300515	039.5-706R	10.7	36.1 – 39.5	19300565	067.5-706R	10.7	64.1 – 67.5
19300348	040.0-706R	10.7	36.6 – 40	19300476	068.0-706R	10.7	64.6 – 68
19300516	040.5-706R	10.7	37.1 – 40.5	19300566	068.5-706R	10.7	65.1 – 68.5
19300517	041.0-706R	10.7	37.6 – 41	19300567	069.0-706R	10.7	65.6 – 69
19300518	041.5-706R	10.7	38.1 – 41.5	19300568	069.5-706R	10.7	66.1 – 69.5
19300519	042.0-706R	10.7	38.6 – 42	19300569	070.0-706R	10.7	66.6 – 70
19300520	042.5-706R	10.7	39.1 – 42.5	19300570	070.5-706R	10.7	67.1 – 70.5
19300349	043.0-706R	10.7	39.6 – 43	19300571	071.0-706R	10.7	67.6 – 71
19300521	043.5-706R	10.7	40.1 – 43.5	19300572	071.5-706R	10.7	68.1 – 71.5
19300522	044.0-706R	10.7	40.6 – 44	19300573	072.0-706R	10.7	68.6 – 72
19300523	044.5-706R	10.7	41.1 – 44.5	19300574	072.5-706R	10.7	69.1 – 72.5
19300524	045.0-706R	10.7	41.6 – 45	19300575	073.0-706R	10.7	69.6 – 73







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