

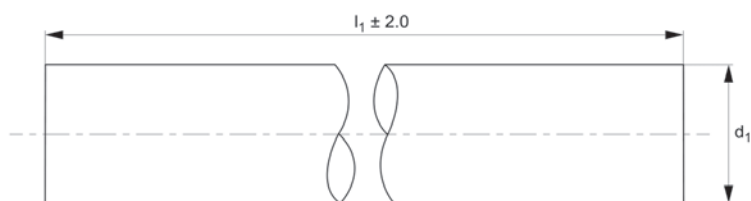


# 20Ø Aluminium Shafts

## Linear Shaft Bars



**L1778.20**



LINEAR SHAFT BARS

### Material

Aluminium EN AW 6061/6060

Surface: Hard anodized

Hardness: 450-550 HV

### Technical Notes

Designed to be used with self-lubricating ceramic bushings (part no.s L1764 to

L1769).

Temp. range -130°C to +200°C.

Non-magnetic, contaminants do not stick to surface, coating is FDA compliant, light-weight.

### Tips

Shaft ends are not coated as standard,

however coated ends are available on request.

Modifications, drilled and tapped holes, circlip grooves, special coatings etc. available.

Shafts lengths are cut to typically  $\pm 2$ mm.

Order No.	d <sub>1</sub> tol. h8	l <sub>1</sub>	Tolerance $\mu$ tol. h6
L1778.20-0100	20	100	+0,-9
L1778.20-0150	20	150	+0,-9
L1778.20-0200	20	200	+0,-9
L1778.20-0250	20	250	+0,-9
L1778.20-0300	20	300	+0,-9
L1778.20-0350	20	350	+0,-9
L1778.20-0400	20	400	+0,-9
L1778.20-0450	20	450	+0,-9
L1778.20-0500	20	500	+0,-9
L1778.20-0550	20	550	+0,-9
L1778.20-0600	20	600	+0,-9
L1778.20-0650	20	650	+0,-9
L1778.20-0700	20	700	+0,-9
L1778.20-0750	20	750	+0,-9
L1778.20-0800	20	800	+0,-9
L1778.20-0850	20	850	+0,-9
L1778.20-0900	20	900	+0,-9
L1778.20-1000	20	1000	+0,-9
L1778.20-1050	20	1050	+0,-9
L1778.20-1100	20	1100	+0,-9
L1778.20-1150	20	1150	+0,-9
L1778.20-1200	20	1200	+0,-9
L1778.20-1250	20	1250	+0,-9
L1778.20-1300	20	1300	+0,-9
L1778.20-1350	20	1350	+0,-9
L1778.20-1400	20	1400	+0,-9
L1778.20-1450	20	1450	+0,-9
L1778.20-1500	20	1500	+0,-9
L1778.20-1550	20	1550	+0,-9
L1778.20-1600	20	1600	+0,-9



**Automotion**  
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Order No.	d <sub>1</sub> tol. h8	l <sub>1</sub>	Tolerance μ tol. h6
L1778.20-1650	20	1650	+0,-9
L1778.20-1700	20	1700	+0,-9
L1778.20-1750	20	1750	+0,-9
L1778.20-1800	20	1800	+0,-9
L1778.20-1850	20	1850	+0,-9
L1778.20-1900	20	1900	+0,-9
L1778.20-1950	20	1950	+0,-9
L1778.20-2000	20	2000	+0,-9



### Hardened steel linear shafting (L1770 – L1771)

Carbon steel to BS 070M55 hardened to 60-65 HRC. Carbon Steel B.S. 070M55 is a medium carbon steel which is used when greater strength and hardness is desired than in its as rolled condition. Extreme size accuracy, straightness and concentricity are combined to minimise wear in high speed applications. Suitable for use with all types of linear bushings.

### Corrosion resistant steel (L1772)

440C is a high carbon chromium martensitic stainless steel, generally supplied in the annealed condition with a maximum hardness of 50-55 HR<sub>C</sub>. Characterised by good corrosion resistance in mild domestic and industrial environments, including fresh water, organic materials, mild acids, various petroleum products, coupled with extreme high strength, hardness and wear resistance when in the hardened and tempered condition. Used for parts requiring a combination of excellent wear resistance, plus reasonable corrosion resistance. Typical applications are: ball bearings and races, bushings, cutlery, chisels, knife blades, pump parts, surgical instruments, valve seats etc. Material magnetic in all conditions. Suitable for use with all types of linear bushings.

### Stainless steel AISI 303 (L1773)

303 is a free machining chromium-nickel austenitic stainless steel with good strength and good corrosion resistance, as supplied in the annealed condition. Characterised by excellent machinability and non galling properties due to its higher sulphur content, which has the effect of slightly lowering its corrosion resistance. It is however, fairly resistant to general atmospheric corrosion, general foodstuffs, sterilizing solutions, dyestuffs, most organic chemicals, plus some inorganic chemicals. But has very limited resistance to acids. 303 cannot be hardened by thermal treatment, but strength and hardness can be increased substantially by cold working, with subsequent reduction in ductility. It is used primarily for production runs involving extensive machining, or complex parts requiring excellent machinability. Typical uses are: architectural components, food processing equipment, dairy equipment, dyeing industry, hardware and kitchenware manufacturing and allied industries. Commonly used to manufacture bolts and nuts, bushes, gears, shafts, valve bodies and fittings etc. Material is non magnetic in the annealed condition, but can become mildly magnetic following heavy cold working. Annealing is required to rectify if necessary.

**Not suitable for use with linear ball bushings, please use ceramic bearings.**

### Stainless steel AISI 303 (L1774)

316 is a chromium-nickel-molybdenum austenitic stainless steel with good strength and excellent corrosion resistance, as supplied in the annealed condition. Characterised by high corrosion resistance in marine and industrial atmospheres, it exhibits excellent resistance to chloride attack and against complex sulphur compounds employed in the pulp and paper processing industries. The addition of 2% to 3% of molybdenum increases its resistance to pitting corrosion and improves its creep resistance at elevated temperatures. Also it displays good oxidation resistance at elevated temperatures and has excellent weldability. AISI 316 cannot be hardened by thermal treatment, but strength and hardness can be increased substantially by cold working, with subsequent reduction in ductility. It is used extensively by the marine, chemical, petrochemical, pulp and paper, textile, transport, manufacturing and allied industries. Typical uses are: architectural components, textile equipment, pulp and paper processing equipment, marine equipment and fittings, photographic equipment and x-ray equipment etc. Material non magnetic in the annealed condition, but can become mildly magnetic following heavy cold working. Annealing is required to rectify if necessary.

**Note: Optimum corrosion resistance is achieved in the annealed condition. Not suitable for use with linear ball bushings; please use ceramic bearings.**



# Linear Shafts from Automation Components

## L1770 - Hardened steel shafts



For use with linear bearings.

Ø6 to Ø60

## L1771 - Hardened hollow shafts



For use with linear bearings. Hollowed for lighter weight.

Ø12 to Ø50

## L1772 - Hardened Stainless shafts



For use with linear bearings  
Anti-corrosion.

Ø6 to Ø60

## L1773 - Stainless 303 shafts



Soft stainless, high anti-corrosion.  
Not for use with ball bush linear bearings.

Ø6 to Ø60

## L1774 - Stainless 316 shafts



Soft stainless, very high anti-corrosion.  
Not for use with ball bushing linear bearings.

Ø6 to Ø60

## L1778 - Aluminium shafts



Light weight, non-magnetic.

Ø10 to Ø50