

### L1770.60

LINEAR SHAFT BARS

#### Material

Carbon steel (070M55, Cf53 - DIN 1.1213), Surface hardness 60-66 HRC. Surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla. Yield stress: >325 N/mm<sup>2</sup>, tensile strength: >630 N/mm<sup>2</sup>.

#### Technical Notes

Tolerance, h6 standard, special tolerances upon request. Suitable for use with linear bearings. Straightness 0,1mm/m.

#### Tips

Modifications, drilled and tapped holes, retainer grooves, special coatings etc. are available. Shaft lengths are cut to typically ± 2mm, ends are not hardened.

Order No.	d <sub>1</sub>	l <sub>1</sub>	Depth of hardness min.	Weight kg
L1770.60-0100	60	100	1.5	2.220
L1770.60-0150	60	150	1.5	3.330
L1770.60-0200	60	200	1.5	4.440
L1770.60-0250	60	250	1.5	5.550
L1770.60-0300	60	300	1.5	6.660
L1770.60-0350	60	350	1.5	7.770
L1770.60-0400	60	400	1.5	8.880
L1770.60-0450	60	450	1.5	9.990
L1770.60-0500	60	500	1.5	11.100
L1770.60-0550	60	550	1.5	12.210
L1770.60-0600	60	600	1.5	13.320
L1770.60-0650	60	650	1.5	14.430
L1770.60-0700	60	700	1.5	15.540
L1770.60-0750	60	750	1.5	16.650
L1770.60-0800	60	800	1.5	17.760
L1770.60-0850	60	850	1.5	18.870
L1770.60-0900	60	900	1.5	19.980
L1770.60-0950	60	950	1.5	21.090
L1770.60-1000	60	1000	1.5	22.200
L1770.60-1050	60	1050	1.5	23.310
L1770.60-1100	60	1100	1.5	24.420
L1770.60-1150	60	1150	1.5	25.530
L1770.60-1200	60	1200	1.5	26.640
L1770.60-1250	60	1250	1.5	27.750
L1770.60-1300	60	1300	1.5	28.860
L1770.60-1350	60	1350	1.5	29.970
L1770.60-1400	60	1400	1.5	31.080
L1770.60-1450	60	1450	1.5	32.190
L1770.60-1500	60	1500	1.5	33.300



Order No.	d <sub>1</sub>	l <sub>1</sub>	Depth of hardness min.	Weight kg
L1770.60-1550	60	1550	1.5	34.410
L1770.60-1600	60	1600	1.5	35.520
L1770.60-1650	60	1650	1.5	36.630
L1770.60-1700	60	1700	1.5	37.740
L1770.60-1750	60	1750	1.5	38.850
L1770.60-1800	60	1800	1.5	39.960
L1770.60-1850	60	1850	1.5	41.070
L1770.60-1900	60	1900	1.5	42.180
L1770.60-1950	60	1950	1.5	43.290
L1770.60-2000	60	2000	1.5	44.400
L1770.60-2050	60	2050	1.5	45.510
L1770.60-2100	60	2100	1.5	46.620
L1770.60-2150	60	2150	1.5	47.730
L1770.60-2200	60	2200	1.5	48.840
L1770.60-2250	60	2250	1.5	49.950
L1770.60-2300	60	2300	1.5	51.060
L1770.60-2350	60	2350	1.5	52.170
L1770.60-2400	60	2400	1.5	53.280
L1770.60-2450	60	2450	1.5	54.390
L1770.60-2500	60	2500	1.5	55.500
L1770.60-2550	60	2550	1.5	56.610
L1770.60-2600	60	2600	1.5	57.720
L1770.60-2650	60	2650	1.5	58.830
L1770.60-2700	60	2700	1.5	59.940
L1770.60-2750	60	2750	1.5	61.050
L1770.60-2800	60	2800	1.5	62.160
L1770.60-2850	60	2850	1.5	63.270
L1770.60-2900	60	2900	1.5	64.380
L1770.60-2950	60	2950	1.5	65.490
L1770.60-3000	60	3000	1.5	66.600
L1770.60-3050	60	3050	1.5	67.710
L1770.60-3100	60	3100	1.5	68.820
L1770.60-3150	60	3150	1.5	69.930
L1770.60-3200	60	3200	1.5	71.040
L1770.60-3250	60	3250	1.5	72.150
L1770.60-3300	60	3300	1.5	73.260
L1770.60-3350	60	3350	1.5	74.370
L1770.60-3400	60	3400	1.5	75.480
L1770.60-3450	60	3450	1.5	76.590
L1770.60-3500	60	3500	1.5	77.700
L1770.60-3550	60	3550	1.5	78.810
L1770.60-3600	60	3600	1.5	79.920
L1770.60-3650	60	3650	1.5	81.030
L1770.60-3700	60	3700	1.5	82.140
L1770.60-3750	60	3750	1.5	83.250
L1770.60-3800	60	3800	1.5	84.360
L1770.60-3850	60	3850	1.5	85.470
L1770.60-3900	60	3900	1.5	86.580
L1770.60-3950	60	3950	1.5	87.690
L1770.60-4000	60	4000	1.5	88.800
L1770.60-4050	60	4050	1.5	89.910
L1770.60-4100	60	4100	1.5	91.020
L1770.60-4150	60	4150	1.5	92.130
L1770.60-4200	60	4200	1.5	93.240
L1770.60-4250	60	4250	1.5	94.350
L1770.60-4300	60	4300	1.5	95.460
L1770.60-4350	60	4350	1.5	96.570
L1770.60-4400	60	4400	1.5	97.680
L1770.60-4450	60	4450	1.5	98.790
L1770.60-4500	60	4500	1.5	99.900
L1770.60-4550	60	4550	1.5	101.010
L1770.60-4600	60	4600	1.5	102.120
L1770.60-4650	60	4650	1.5	103.230
L1770.60-4700	60	4700	1.5	104.340
L1770.60-4750	60	4750	1.5	105.450
L1770.60-4800	60	4800	1.5	106.560
L1770.60-4850	60	4850	1.5	107.670
L1770.60-4900	60	4900	1.5	108.780



## 60Ø Hardened Steel Shafts

## Linear Shaft Bars



Order No.	d <sub>1</sub>	l <sub>1</sub>	Depth of hardness min.	Weight kg
L1770.60-4950	60	4950	1.5	109.890
L1770.60-5000	60	5000	1.5	111.000
L1770.60-5050	60	5050	1.5	112.110
L1770.60-5100	60	5100	1.5	113.220
L1770.60-5150	60	5150	1.5	114.330
L1770.60-5200	60	5200	1.5	115.440
L1770.60-5250	60	5250	1.5	116.550
L1770.60-5300	60	5300	1.5	117.660
L1770.60-5350	60	5350	1.5	118.770
L1770.60-5400	60	5400	1.5	119.880
L1770.60-5450	60	5450	1.5	120.990
L1770.60-5500	60	5500	1.5	122.100
L1770.60-5550	60	5550	1.5	123.210
L1770.60-5600	60	5600	1.5	124.320
L1770.60-5650	60	5650	1.5	125.430
L1770.60-5700	60	5700	1.5	126.540
L1770.60-5750	60	5750	1.5	127.650
L1770.60-5800	60	5800	1.5	128.760
L1770.60-5850	60	5850	1.5	129.870
L1770.60-5900	60	5900	1.5	130.980
L1770.60-5950	60	5950	1.5	132.090
L1770.60-6000	60	6000	1.5	133.200

LINEAR SHAFT BARS



#### 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 Automotion Components

<p><b>L1770 - Hardened steel shafts</b></p>  <p>For use with linear bearings.</p> <p>Ø6 to Ø60</p>	<p><b>L1771 - Hardened hollow shafts</b></p>  <p>For use with linear bearings. Hollowed for lighter weight.</p> <p>Ø12 to Ø50</p>
<p><b>L1772 - Hardened Stainless shafts</b></p>  <p>For use with linear bearings Anti-corrosion.</p> <p>Ø6 to Ø60</p>	<p><b>L1773 - Stainless 303 shafts</b></p>  <p>Soft stainless, high anti-corrosion. Not for use with ball bush linear bearings.</p> <p>Ø6 to Ø60</p>
<p><b>L1774 - Stainless 316 shafts</b></p>  <p>Soft stainless, very high anti-corrosion. Not for use with ball bushing linear bearings.</p> <p>Ø6 to Ø60</p>	<p><b>L1778 - Aluminium shafts</b></p>  <p>Light weight, non-magnetic.</p> <p>Ø10 to Ø50</p>