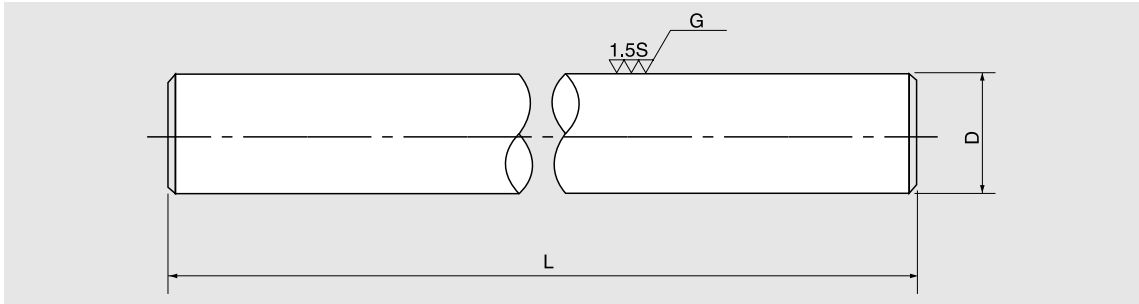


PRECISION GROUND LM SHAFT



STANDARD SHAFT

LS-STANDARD SHAFT



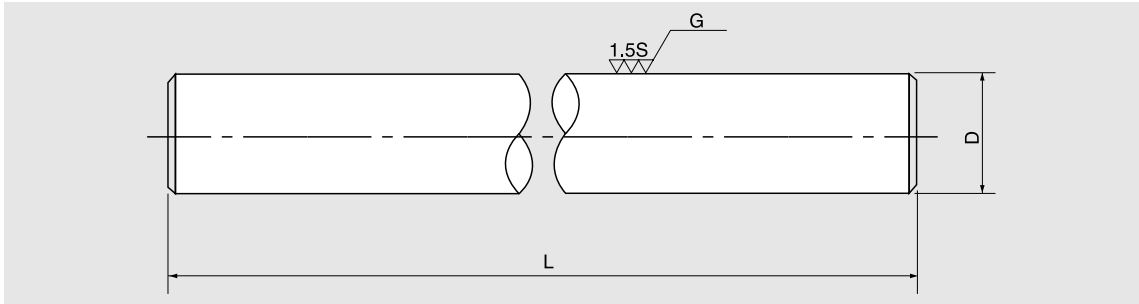
| Diameter D mm | Type No LS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | | | | |
|------------------|---------------|-----|-------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|------|--|--|--|
| | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1500 | 1800 | | | |
| 3 | LS | 3 | -2 -8 | | | | | | | | | | | | | |
| 4 | LS | 4 | -4 | | | | | | | | | | | | | |
| 5 | LS | 5 | -12 | | | | | | | | | | | | | |
| 6 | LS | 6 | -5 | | | | | | | | | | | | | |
| 8 | LS | 8 | -14 | | | | | | | | | | | | | |
| 10 | LS | 10 | -6 | | | | | | | | | | | | | |
| 12 | LS | 12 | -7 | | | | | | | | | | | | | |
| 13 | LS | 13 | -20 | | | | | | | | | | | | | |
| 16 | LS | 16 | -9 | | | | | | | | | | | | | |
| 20 | LS | 20 | -25 | | | | | | | | | | | | | |
| 25 | LS | 25 | -10 | | | | | | | | | | | | | |
| 30 | LS | 30 | -29 | | | | | | | | | | | | | |
| 35 | LS | 35 | -12 | | | | | | | | | | | | | |
| 40 | LS | 40 | -34 | | | | | | | | | | | | | |
| 50 | LS | 50 | -14 | | | | | | | | | | | | | |
| 60 | LS | 60 | -39 | | | | | | | | | | | | | |
| 80 | LS | 80 | | | | | | | | | | | | | | |
| 100 | LS | 100 | | | | | | | | | | | | | | |
| 120 | LS | 120 | | | | | | | | | | | | | | |
| 150 | LS | 150 | | | | | | | | | | | | | | |

- ▶ Material SUJ 2 (bearing steel)
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than H_RC 60°~64°
- ▶ Tolerance of shaft diameter g6

SBC LM shaft manufactured by long-year rich experiences is suitable for high-quality products like special pneumatic cylinder rod, automatic precision printers, automatic cutting machines, and industrial robots. SBC LM shaft can be applied to every linear motion system.

| Standardized length L mm | | | | | | | | | | Effective case hardened zone mm | Weight kg/m | Diameter D mm |
|-----------------------------|------|------|------|------|------|------|------|------|--|------------------------------------|----------------|------------------|
| 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 | | | | |
| | | | | | | | | | | 0.06 | 3 | |
| | | | | | | | | | | 0.10 | 4 | |
| | | | | | | | | | | 0.16 | 5 | |
| | | | | | | | | | | 0.23 | 6 | |
| | | | | | | | | | | 0.40 | 8 | |
| | | | | | | | | | | 0.62 | 10 | |
| | | | | | | | | | | 0.89 | 12 | |
| | | | | | | | | | | 1.04 | 13 | |
| | | | | | | | | | | 1.58 | 16 | |
| | | | | | | | | | | 2.47 | 20 | |
| | | | | | | | | | | 3.85 | 25 | |
| | | | | | | | | | | 5.55 | 30 | |
| | | | | | | | | | | 7.55 | 35 | |
| | | | | | | | | | | 9.87 | 40 | |
| | | | | | | | | | | 15.4 | 50 | |
| | | | | | | | | | | 22.2 | 60 | |
| 39.5 | 80 | | | | | | | | | | | |
| 61.7 | 100 | | | | | | | | | | | |
| 88.8 | 120 | | | | | | | | | | | |
| 139 | 150 | | | | | | | | | | | |

LCS-LM HARD CHROMIC PLATING SHAFT



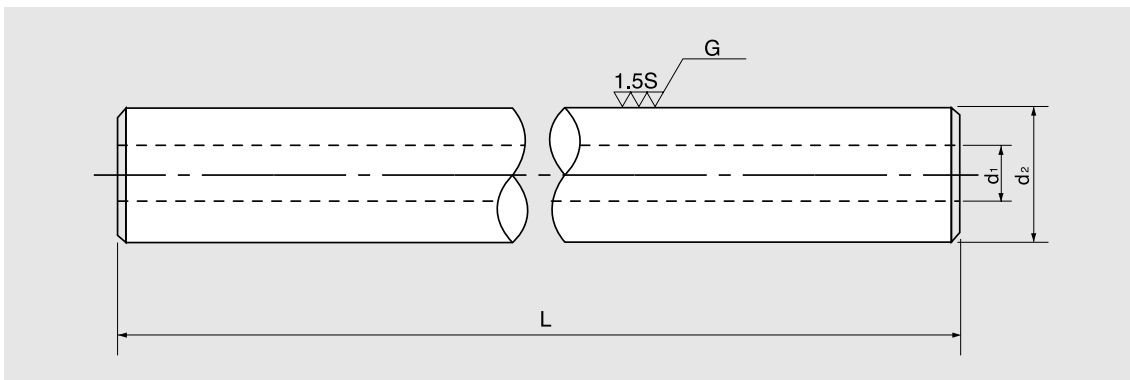
| Diameter D mm | Type No LCS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | | | | |
|------------------|----------------|-----|-------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|------|--|--|--|
| | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1500 | 1800 | | | |
| 3 | LCS | 3 | -2 -8 | | | | | | | | | | | | | |
| 4 | LCS | 4 | -4 | | | | | | | | | | | | | |
| 5 | LCS | 5 | -12 | | | | | | | | | | | | | |
| 6 | LCS | 6 | -5 | | | | | | | | | | | | | |
| 8 | LCS | 8 | -14 | | | | | | | | | | | | | |
| 10 | LCS | 10 | -6 | | | | | | | | | | | | | |
| 12 | LCS | 12 | -17 | | | | | | | | | | | | | |
| 13 | LCS | 13 | -7 | | | | | | | | | | | | | |
| 16 | LCS | 16 | -20 | | | | | | | | | | | | | |
| 20 | LCS | 20 | -9 | | | | | | | | | | | | | |
| 25 | LCS | 25 | -25 | | | | | | | | | | | | | |
| 30 | LCS | 30 | -10 | | | | | | | | | | | | | |
| 35 | LCS | 35 | -29 | | | | | | | | | | | | | |
| 40 | LCS | 40 | -12 | | | | | | | | | | | | | |
| 50 | LCS | 50 | -34 | | | | | | | | | | | | | |
| 60 | LCS | 60 | -14 | | | | | | | | | | | | | |
| 80 | LCS | 80 | -39 | | | | | | | | | | | | | |
| 100 | LCS | 100 | | | | | | | | | | | | | | |
| 120 | LCS | 120 | | | | | | | | | | | | | | |
| 150 | LCS | 150 | | | | | | | | | | | | | | |

- ▶ Material SUJ 2 (bearing steel)
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than H_RC 60°~64°
- ▶ Tolerance of shaft diameter g6
- ▶ Plating thickness 0.5~1.0μm

Chromium–plated SBC LM shaft is highly anti–corrosive, so it is appropriate for the environment where oxidization easily occurs by water, chemicals, vapor, sea water, etc.

| Standardized length L mm | | | | | | | | | | Effective case hardened zone mm | Weight kgf/m | Diameter D mm |
|-----------------------------|------|------|------|------|------|------|------|------|--|------------------------------------|-----------------|------------------|
| 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 | | | | |
| | | | | | | | | | | 0.06 | 3 | |
| | | | | | | | | | | 0.10 | 4 | |
| | | | | | | | | | | 0.16 | 5 | |
| | | | | | | | | | | 0.23 | 6 | |
| | | | | | | | | | | 0.40 | 8 | |
| | | | | | | | | | | 0.62 | 10 | |
| | | | | | | | | | | 0.89 | 12 | |
| | | | | | | | | | | 1.04 | 13 | |
| | | | | | | | | | | 1.58 | 16 | |
| | | | | | | | | | | 2.47 | 20 | |
| | | | | | | | | | | 3.85 | 25 | |
| | | | | | | | | | | 5.55 | 30 | |
| | | | | | | | | | | 7.55 | 35 | |
| | | | | | | | | | | 9.87 | 40 | |
| | | | | | | | | | | 15.4 | 50 | |
| | | | | | | | | | | 22.2 | 60 | |
| 39.5 | 80 | | | | | | | | | | | |
| 61.7 | 100 | | | | | | | | | | | |
| 88.8 | 120 | | | | | | | | | | | |
| 139 | 150 | | | | | | | | | | | |

LSS-SUS 440C SHAFT



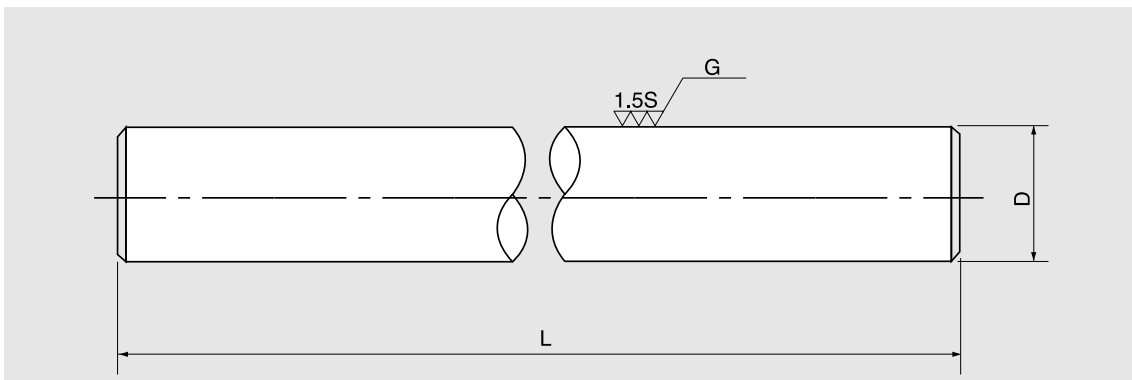
| Diameter D mm | Type No LSS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | | | | | | | | | | |
|------------------|----------------|----|-------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|------|--|--|--|--|--|--|--|--|--|
| | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1500 | 1800 | | | | | | | | | |
| 6 | LSS | 6 | -5 | | | | | | | | | | | | | | | | | | | |
| 8 | LSS | 8 | -14 | | | | | | | | | | | | | | | | | | | |
| 10 | LSS | 10 | -6 | | | | | | | | | | | | | | | | | | | |
| 12 | LSS | 12 | -17 | | | | | | | | | | | | | | | | | | | |
| 13 | LSS | 13 | -7 | | | | | | | | | | | | | | | | | | | |
| 16 | LSS | 16 | -20 | | | | | | | | | | | | | | | | | | | |
| 20 | LSS | 20 | -9 | | | | | | | | | | | | | | | | | | | |
| 25 | LSS | 25 | -25 | | | | | | | | | | | | | | | | | | | |
| 30 | LSS | 30 | | | | | | | | | | | | | | | | | | | | |
| 35 | LSS | 35 | | | | | | | | | | | | | | | | | | | | |
| 40 | LSS | 40 | | | | | | | | | | | | | | | | | | | | |
| 50 | LSS | 50 | | | | | | | | | | | | | | | | | | | | |

- ▶ Material improved over SUS 440C
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than HRC 60°~64°
- ▶ Tolerance of shaft diameter g6

SBC stainless shaft is highly anti-corrosive, so it is appropriate for the environment where oxidization easily occurs by water, chemicals, vapor, sea water, etc.

| Standardized length L mm | Effective case hardened zone mm | Weight kgf/m | Diameter D mm |
|--|------------------------------------|-----------------|------------------|
| 2000 2500 3000 3500 4000 4500 5000 5500 6000 | OVER 1.5 | 0.22 | 6 |
| | | 0.39 | 8 |
| | | 0.61 | 10 |
| | | 0.88 | 12 |
| | OVER 2.0 | 1.03 | 13 |
| | | 1.56 | 16 |
| | | 2.43 | 20 |
| | OVER 2.5 | 3.80 | 25 |
| | | 5.48 | 30 |
| | | 7.23 | 35 |
| | | 9.44 | 40 |
| | OVER 3.0 | 15.2 | 50 |

LPS-LM PIPE SHAFT



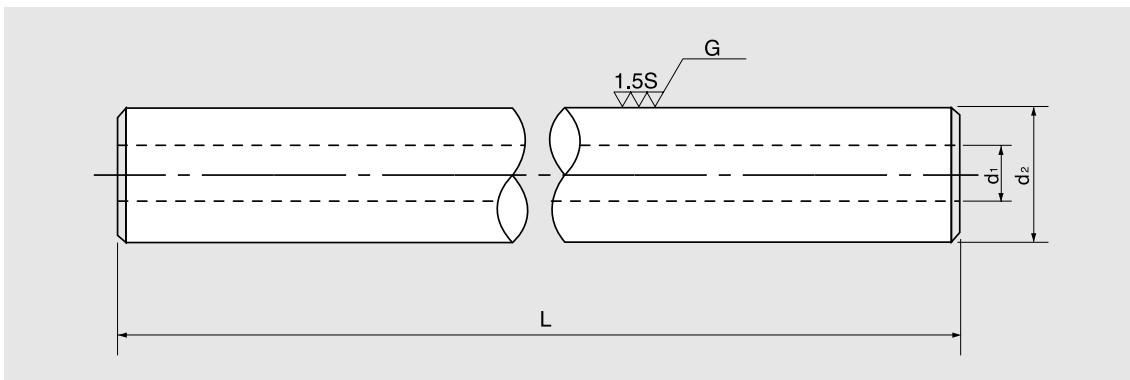
| Outer Diameter d_2 mm | Inner Diameter d_1 mm | Type No LPS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | | | | | |
|----------------------------|----------------------------|----------------|-----|-------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|--|--|--|--|--|
| | | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 | | | | | |
| 16 | 9 | LPS | 16 | -5 -17 | | | | | | | | | | | | | | |
| 20 | 14 | LPS | 20 | -7 | | | | | | | | | | | | | | |
| 25 | 15 | LPS | 25 | -20 | | | | | | | | | | | | | | |
| 30 | 16 | LPS | 30 | -9 | | | | | | | | | | | | | | |
| 35 | 19 | LPS | 35 | -25 | | | | | | | | | | | | | | |
| 40 | 20 | LPS | 40 | -10 | | | | | | | | | | | | | | |
| 50 | 25 | LPS | 50 | -29 | | | | | | | | | | | | | | |
| 60 | 32 | LPS | 60 | -12 | | | | | | | | | | | | | | |
| 80 | 40 | LPS | 80 | -34 | | | | | | | | | | | | | | |
| 100 | 50 | LPS | 100 | | | | | | | | | | | | | | | |

- ▶ Material SUJ 2 (bearing steel)
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than HRC 60°~64°
- ▶ Tolerance of shaft diameter g6

SBC pipe shaft has every feature that common LM shafts share, and yet greatly contributes to reducing weight and the simplification of machine due to its hollow structure. The hollow inner space of SBC pipe shaft is suitable for electric wiring, air/oil pressure pipe arrangement, fluid/lubricating passage, and robot arms.

| Standardized length L mm | Effective case hardened zone mm | Weight kgf/m | Outer Diameter d ₁ mm | Inner Diameter d ₂ mm |
|---|---------------------------------------|-----------------|--|--|
| | | | | |
| 1500 1800 2000 2500 3000 3500 4000 4500 | | 1.18 | 16 | 8 |
| | OVER 1.5 | 1.85 | 20 | 14 |
| | | 2.46 | 25 | 15 |
| | OVER 2.0 | 3.97 | 30 | 16 |
| | | 5.32 | 35 | 19 |
| | OVER 2.5 | 7.39 | 40 | 20 |
| | | 11.3 | 50 | 26 |
| | | 15.9 | 60 | 32 |
| | OVER 3.0 | 25.3 | 80 | 48 |
| | | 39.5 | 100 | 60 |

LCPS-LM CHROMIC PLATING PIPE SHAFT



| Outer Diameter d_2 mm | Inner Diameter d_1 mm | Type No LCPS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | | |
|----------------------------|----------------------------|-----------------|-----|-------------------------------|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|--|--|
| | | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 | | |
| 16 | 9 | LCPS | 16 | -6 -17 | | | | | | | | | | | |
| 20 | 14 | LCPS | 20 | -7 | | | | | | | | | | | |
| 25 | 16 | LCPS | 25 | -20 | | | | | | | | | | | |
| 30 | 17 | LCPS | 30 | -9 | | | | | | | | | | | |
| 35 | 19 | LCPS | 35 | -25 | | | | | | | | | | | |
| 40 | 20 | LCPS | 40 | -10 | | | | | | | | | | | |
| 50 | 25 | LCPS | 50 | -29 | | | | | | | | | | | |
| 60 | 30 | LCPS | 60 | -12 | | | | | | | | | | | |
| 80 | 40 | LCPS | 80 | -34 | | | | | | | | | | | |
| 100 | 50 | LCPS | 100 | | | | | | | | | | | | |

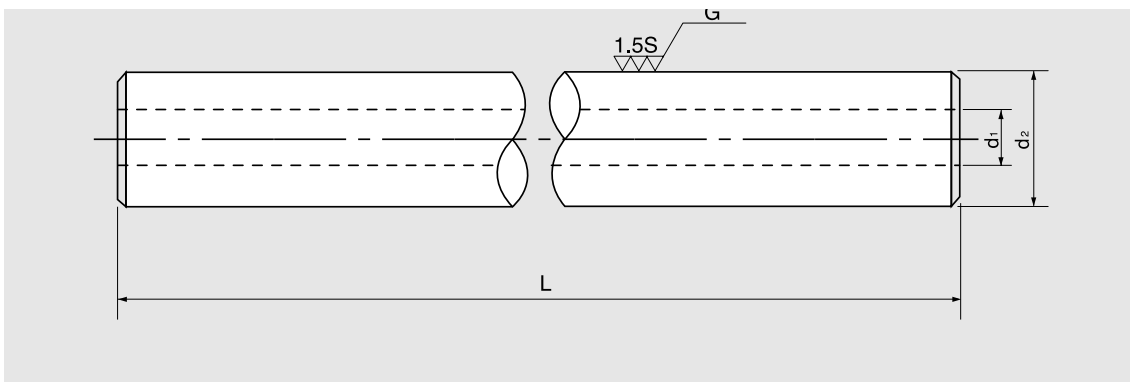
- ▶ Material SUJ 2 (bearing steel)
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than HRC 60°~64°
- ▶ Tolerance of shaft diameter g6
- ▶ Plating thickness 0.5~1.0μm

Chromium–plated SBC LM pipe shaft is highly anti–corrosive, so it is appropriate for the environment where oxidization easily occurs by water, chemicals, vapor, sea water, etc. Retaining every feature that common LM shafts share, it greatly contributes to reducing weight and the simplification of machine due to its hollow structure. The hollow inner space of chromium–plated SBC pipe shaft is suitable for electric wiring, air/oil pressure pipe arrangement, fluid/lubricating passage, and robot arms.

| Standardized length L mm | Effective case hardened zone mm | Weight kgf/m | Outer Diameter d ₁ mm | Inner Diameter d ₂ mm |
|---|---------------------------------------|-----------------|--|--|
| | | | | |
| 1500 1800 2000 2500 3000 3500 4000 4500 | | 1.18 | 16 | 8 |
| | OVER 1.5 | 1.85 | 20 | 14 |
| | | 2.46 | 25 | 15 |
| | OVER 2.0 | 3.97 | 30 | 16 |
| | | 5.32 | 35 | 19 |
| | OVER 2.5 | 7.39 | 40 | 20 |
| | | 11.3 | 50 | 26 |
| | | 15.9 | 60 | 32 |
| | OVER 3.0 | 25.3 | 80 | 48 |
| | | 39.5 | 100 | 60 |



LSPS-LM SUS PIPE SHAFT



| Outer Diameter d_2 mm | Inner Diameter d_1 mm | Type No LPS | | Tolerance μm g6 | Standardized length L mm | | | | | | | | | |
|----------------------------|----------------------------|----------------|----|---|-----------------------------|-----|-----|-----|-----|-----|-----|------|------|--|
| | | | | | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 | |
| 16 | 8 | LSPS | 16 | $\begin{matrix} -6 \\ -17 \end{matrix}$ | | | | | | | | | | |
| 20 | 10 | LSPS | 20 | $\begin{matrix} -7 \\ -20 \end{matrix}$ | | | | | | | | | | |
| 25 | 15 | LSPS | 25 | $\begin{matrix} -9 \\ -25 \end{matrix}$ | | | | | | | | | | |
| 30 | 16 | LSPS | 30 | $\begin{matrix} -9 \\ -25 \end{matrix}$ | | | | | | | | | | |
| 35 | 19 | LSPS | 35 | $\begin{matrix} -9 \\ -25 \end{matrix}$ | | | | | | | | | | |
| 40 | 20 | LSPS | 40 | $\begin{matrix} -9 \\ -25 \end{matrix}$ | | | | | | | | | | |

- ▶ Material improved over SUS 440C
- ▶ Hardening depth more than 0.5mm
- ▶ High – frequency induction hardening
- ▶ Surface roughness less than 1.5s
- ▶ Hardness more than H_RC 60°~64°
- ▶ Tolerance of shaft diameter g6

SBC LM SUS 440C pipe shaft is highly anti-corrosive, so it is appropriate for the environment where oxidization easily occurs by water, chemicals, vapor, sea water, etc. Retaining every feature that common shafts share, SUS 440C pipe shaft greatly contributes to reducing weight and the simplification of machine due to its hollow structure. The hollow inner space of SUS 440C pipe shaft is suitable for electric wiring, air/oil pressure pipe arrangement, fluid/lubricating passage, and robot arms.

| Standardized length L mm | | | | | | | | | Effective case hardened zone mm | Weight kgf/m | Outer Diameter d ₁ mm | Inner Diameter d ₂ mm |
|-----------------------------|------|------|------|------|------|------|------|--|---------------------------------------|-----------------|--|--|
| 1500 | 1800 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | | | | | |
| | | | | | | | | | OVER 1.5 | 1.18 | 16 | 8 |
| | | | | | | | | | | 1.85 | 20 | 14 |
| | | | | | | | | | | 2.46 | 25 | 15 |
| | | | | | | | | | OVER 2.0 | 3.97 | 30 | 16 |
| | | | | | | | | | | 5.32 | 35 | 19 |
| | | | | | | | | | OVER 2.5 | 7.39 | 40 | 20 |

