

Non-Galling, High Strength Stainless Pump Shaft

Key Advantages

Corrosion Resistance – Similar to that of 316L Stainless, **Mir 50** is engineered for use in severe service applications. Most commercial stainless grades fight corrosion but lack strength. Alloy grades and hardenable stainless grades have strength but lack corrosion resistance. **Mir 50** does both.

High Strength – **Mir 50** is a thermally hardened martensitic stainless alloy. It has similar strength levels like a 4340 Q&T alloy bar product with approx. 140KSI tensile strength. Austenitic grades, such as 304 and 316 stainless, require strain hardening or cold reduction to obtain their hardness. As the shaft size increases, the hardness, strength, and wear resistance, drop off substantially. **Mir 50** is thermally treated, the hardness and strength properties remain virtually constant, from the smallest to the largest bars.

Double Stress Relieved – **Mir 50** shafts are shipped virtually free of retained stress. This material will be a welcomed change from the warp and bend, common to other stainless grades. Because **Mir 50** has “low memory” properties, these shafts will not exhibit the “movement” and “walking” commonly experienced when machining 304, 316, and other stainless grades.

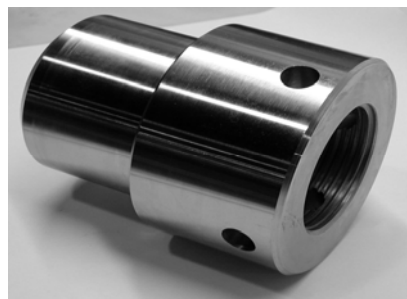
Ease of Machining – **Mir 50** machines easily. It is not gummy, and it will hold a bright finish. Because **Mir 50** machines easily, there is little induced stress to cause movement once the shaft is in service. You save time and money by getting the shaft into service quickly and eliminating many of the previously required straightening operations.

Non-Galling – **Mir 50** is non-galling. It is compatible with almost every other stainless grade, as well as carbon and alloy grades of steel. Maintenance people will find that hex nuts, caps, and collars come apart easily for inspection, replacement and repair.

Pump Shaft Straightness – **Mir 50** has been specifically designed as a maintenance material suitable for pump shaft applications in highly corrosive environments. It is strong, machines easily, and stays straight during machining and in service. **Mir 50 is also available with a semi-finished, oversized, surface finish, so that the size will make the size.** Specify semi-finished pump shaft stock when you do not require TG&P stock.

Excellent Low Temperature Properties – **Mir 50** offers excellent mechanical properties at low service temperatures; @ -325°F on a 1” Diameter Bar

Typical Yield Strength 136,000 P.S.I.
Typical Tensile Strength 219,000 P.S.I.
Impact Strength 36 Ft/Lbs



Compare Mir 50 and ASC2250 LDX to commercial grades of stainless 304L, 316L, 410 and 416 see pages 49, 50, and 51.

(Past Protected Trade Name of Ludlow Steel Co.- RH4500®)

MIR 50®

Non-Galling, High Strength Stainless Pump Shaft



Typical Mechanical Properties*

Brinell Hardness	258/294 BHN
Tensile Strength	140,000 P.S.I.
Yield Strength	108,000 P.S.I.
Elongation	26%
Reduction of Area	65%
Charpy "V" Notch Impact	105 @ 70°F
RMS Surface FinishApprox. 15

*Based on 1/2" Diameter Test Specimen

Diameter Tolerances*

Up To 1-1/2" Round	(+.000"/-.001")
Over 1-1/2" Round to 3-1/2" Round	(+.000"/-.002")
Over 3-1/2" Round to 4-1/2" Round	(+.000"/-.003")
Over 4-1/2" Round to 5-1/2" Round	(+.000"/-.004")
Over 5-1/2" Round and Above	Per Application

*Semi-Finished bars are furnished in the oversize condition to allow proper clean-up to the nominal

Available Sizes*

1/4"	5/8"	1"	1-7/16"	2"	2-11/16"	3-7/16"	4-1/2"	7"
5/16"	11/16"	1-1/8"	1-1/2"	2-3/16"	2-3/4"	3-1/2"	5"	8"
3/8"	3/4"	1-3/16"	1-9/16"	2-1/4"	2-15/16"	3-3/4"	5-1/2"	9"
7/16"	13/16"	1-1/4"	1-5/8"	2-7/16"	3"	3-15/16"	6"	
1/2"	7/8"	1-5/16"	1-3/4"	2-1/2"	3-1/4"	4"	6-1/2"	
9/16"	15/16"	1-3/8"	1-15/16"	2-9/16"	3-3/8"	4-7/16"	6-3/4"	

*Shaded sizes may have modified analysis due to production restrictions. Inquire on available lengths.
INQUIRE OF METRICS – FORGINGS – and SPECIAL SIZES

Available Lengths

Random Bars Up To 29 Ft
Cut To Length Bars Per Your Requirements

Agency Concurrence

NACE MR-01-75-97 revision
API – 6A
FDA
AMS-5763 (chemistry only)

Typical Straightness Standard

Pump Shaft Straightness is .005" in the first 5 feet, plus .0015" for each additional foot. We take extra precautions to protect small diameter bars with longer lengths but straightness is perishable.

Service Temperature

To maintain the unusually high degree of toughness, service temperature should be limited to 800°F, although **Mir 50** exhibits excellent oxidation resistance to 1200°F.

Mir 50 is boxed to protect the surface finish and straightness of the bar.