Hydra-Cell® SIMPLY BUILT TO LAST INDUSTRIAL PUMPS

PARTS BULLETIN

05-07 Bulletin P-3

ELGILOY® VALVE SPRINGS

Elgiloy valve springs have proven to be excellent springs for a wide variety of applications. To greatly reduce valve spring problems, use Elgiloy valve springs whenever possible.

The following information has been reprinted from publications from Elgiloy Limited Partnership.

Elgiloy® ..... A new cobalt nickel spring alloy
Corrosion-Resistant ..... Far exceeds stainless steel
Greater spring efficiency ..... Increased power with decreased size
Fatigue-Resistant ..... Operates much longer without breaking
Set-Resistant ..... Maintains constant reactive force
Temperature-Resistant ..... Maintains its spring characteristics up to 600°F

NOMINAL COMPOSITION

Cobalt 40%
Chromium 20%
Nickel 15%
Molybdenum 7%
Manganese 2%
Carbon 0.15%
Beryllium 0.04%
Iron ..... balance

GALVANIC ACTION (volts in 10% H_2SO_4 electrolyte)

Silver ..... -0.29
Elgiloy Metal ..... -0.27
Copper ..... -0.20
Brass ..... -0.13
Lead 0.00
Steel (1% C) ..... +0.30
Zinc ..... +0.71

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Elgiloy®
The Product You Need... When Others Fail!

Elgiloy is a high performance, all-purpose alloy...used most successfully for a variety of difficult applications. Elgiloy can be converted into a wide range of products including coil and flat springs, drive bands, torsion bars, ball bearings, pivots and cables.

ELGILOY SPECIFICATIONS

Strip	*Wire*
AMS5875	AMS5833
AMS5876	AMS5834
NOLWS13822	NOLWS13822
UNSR30003	UNSR30003

If you require corrosion resistant alloy with high strength, ductility and good mechanical properties, even at elevated temperatures, then Elgiloy is the product you should specify.

CORROSION COMPARISON TABLE

CORROSIVE MEDIA	CONCENTRATION PERCENT	TEMPERATURE DEGREE F	ELGILOY	ALLOY HASTELLOY C-276	316SS
Acetic Acid	50%	223	E	G	S
Acetic Acid	10%	210-220	E	-	E
Ammonium Chloride	50%	235	E	S	-
Ammonium Chloride	10%-15%	220	E	E	E
Ammonium Sulfate	10%	210-220	E	E	-
Calcium Chloride	10%	218	E	E	E
Chromic Acid	10%	224	U	U	-
Citric Acid	10%	222	E	E	E
Cupric Chloride	10%	215	U	-	U
Ferric Chloride	10%	216	U	-	U
Ferric Chloride	10%	75	E	E	E
Hydrochloric Acid	Concentrated	230	U	-	U
Hydrochloric Acid	50%	230	U	-	U
Hydrochloric Acid	10%	216	U	U	U
Lactic Acid	10%	219	E	E	-
Mercuric Chloride	10%	214	E	-	U
Nitric Acid	Concentrated	230	F	-	S
Nitric Acid	50%	230	G	-	G
Nitric Acid	10%	216	E	G	-
Oxalic Acid	10%	216	G	G	U
Phenol	10%	219	E	-	E
Phosphoric Acid	Concentrated	330	U	-	U
Phosphoric Acid	50%-55%	240-250	S	G	U
Phosphoric Acid	10%	225	E	-	G
Sodium Chloride	10%	218	E	E	E
Sodium Cyanide	10%	218	E	-	E
Sodium Sulfide	10%	220	E	-	E
Sodium Sulfite	10%	220	E	-	E
Stannous Chloride	10%	216	E	-	E
Sulfuric Acid	Concentrated	498	U	-	U
Sulfuric Acid	50%	302	U	-	U
Sulfuric Acid	10%	221	U	S	U
Tartanic Acid	10%	219	E	-	E
Zinc Chloride	10%	217	E	E	E

KEY

E	Excellent	Less than 2 mpy (0.05 mm/y)
G	Good	2 mpy to 10 mpy (0.05 mm/y to 0.25 mm/y)
S	Satisfactory	10 mpy to 20 mpy (0.25 mm/y to .51 mm/y)
F	Fair	20 mpy to 50 mpy (0.51 mm/y to 1.27 mm/y)
U	Unsatisfactory	Over 50 mpy (1.27 mm/y)

These charts are intended only as a guide and should not be construed as exact data.
The only reliable method is to sample material under actual conditions.