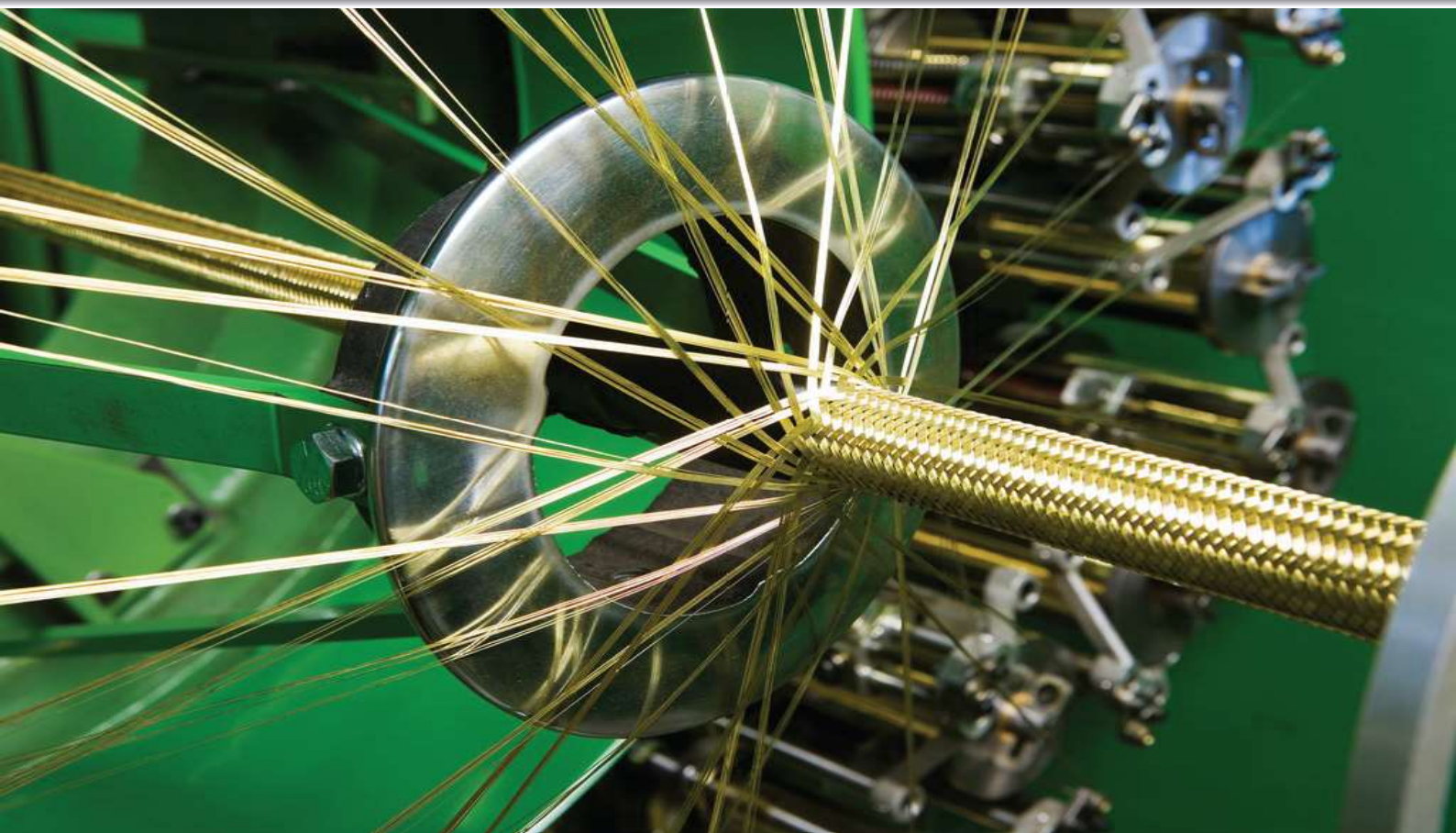




**HIGH PRESSURE HOSES**

**High pressure hoses according to the standards EN 853, 856, 857**



**Russia  
Kemerovo region  
Novokuznetsk**

## LLC "Svarog"

The company is a producer of high pressure hoses. It is located in the city of Novokuznetsk in 2007. The first products were released in 2007.

Has the capacity to manufacture over 3.5 million meters of high pressure hoses per year. In Moscow there is an office and warehouses with products.

## Our Mission

Manufacturing of high pressure hoses, highly competitive with its analogues produced by the leading European companies. The consistent high quality of the Svarog's hoses is secured by:

- the unique technology to produce hoses with a continuous length of up to 400 meters,
- our state-of-the-art, reliable manufacturing and laboratory equipment from the leading world producers,

- the automated process control system;
- the incoming raw material control,
- the 100% acceptance inspection of finished products,
- our highly qualified staff.

## We have

- a quality management system, certified by DQS, the international certification agency, and an ISO 9001:2015 Certificate of Conformity,
- a Certificate of Conformity for the products as per GOST R, the system of compulsory and voluntary certification,
- a Certificate No. 014.10.A on the voluntary registration of intellectual property, protected as a commercial secret ("know-how") for BULAT-type hoses.

- a Certificate No. 015.10.A on the development and application of unique production process,
- a laureate diploma of the "Best Kuzbass Goods & Services" contest and a diploma of the "Best 100 Goods of Russia" contest,
- a certified test laboratory, fitted with the equipment from the leading German and Italian producers.

## Assortment of production

- 1 SN, 2SN for EN 853 (GOST 6286),
- 1 SC, 2SC for EN 857 (GOST 6286),
- 4 SP, 4SH for EN 856 (GOST 25452)
- MOROZ 1SN, 2SN, 1SC, 2SC, 4SP, 4SH – frost-resistant hoses of EN 853, EN 856, EN 857 standards with an application temperature of up to -50° C

- BULAT 2SN for EN 853 with increased working pressure (the Certificate No. 014.10.A on the voluntary registration of intellectual property, protected as a commercial secret ("know-how")).

## Conditions of application

The EN 853, EN 856, EN 857 high pressure hoses manufactured by LLC "Svarog" are designed for the usage with:

- hydraulic liquids in accordance with the requirements ISO 6743-4, except for HFD R, HFD S and HFD T, in a temperature range from - 40 °C to +100 °C;

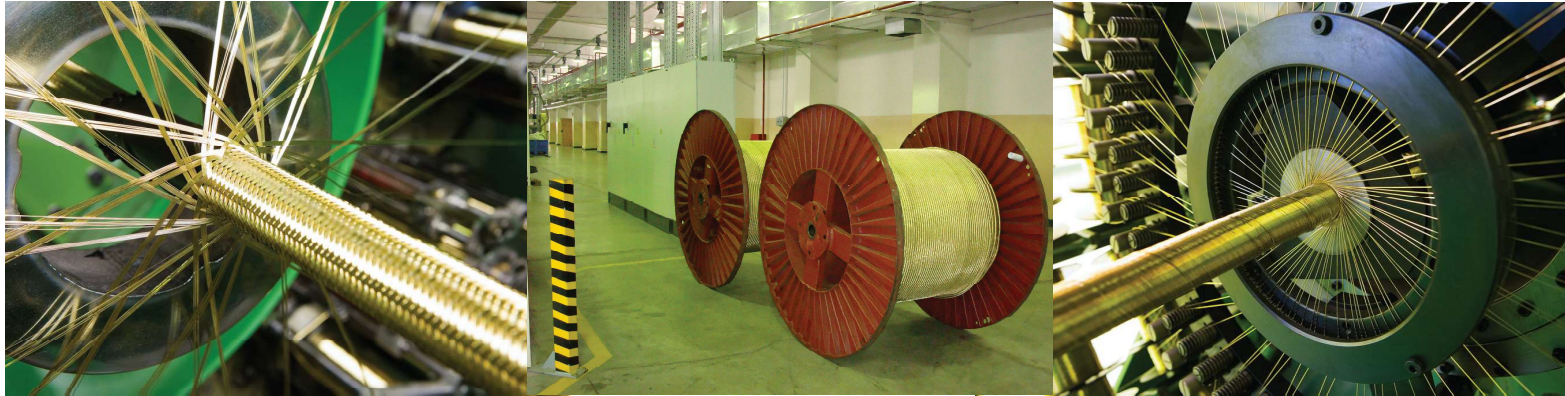
- water-based liquids in a temperature range from - 40 °C to +70 °C;

- water in a temperature range from 0 °C to +70 °C. The high pressure hoses are applicable at an ambient temperature from - 50 °C to +70 °C.

## Warranty obligations

For all the products, we provide warranty of up to 6 years while complying with the storage and operation requirements: The guaranteed storage life of hoses without edge reinforcement is 4 years from the production date. The guaranteed storage life of hoses is 2 years from the assembly of edge reinforcement. Storage and operation requirements for high pressure hoses as per cl. 3.2, 3.3 GOST ISO 8331-2016

### Production



### Laboratory



Viscometer, Rheometer, press machines



Tearing machine, hardness tester



Impulse machine



Pressure test device



Ozone aging chamber



Freezer



# High pressure hoses EN 853



## 1 SN EN 853

**Hose construction:**

**Tube:** oil and water resistant rubber

**Reinforcement:** one high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner , mm	Max. outer, mm				
6	1/4	6.4-7.0	14.1	225	900	100	0.24
8	5/16	7.9-8.5	15.7	215	850	115	0.25
10	3/8	9.5-10.1	18.1	180	720	130	0.34
12	1/2	12.7-13.5	21.4	160	640	180	0.41
16	5/8	15.8-16.7	24.5	130	520	200	0.52
19	3/4	18.8-19.8	28.5	105	420	240	0.60
25	1	25.4-26.4	36.6	88	350	300	0.90
31	1.1/4	31.8-33.0	44.8	63	250	420	1.21
38	1.1/2	38.1-39.3	52.1	50	200	500	2.28





## 2 SN EN 853

**Hose construction:**






**Tube:** oil and water resistant rubber

**Reinforcement:** two high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 Working pressure bar	 Burst pressure bar	 Min. bend radius	Weight (kg/m)
mm	inch	 Inner, mm	 Max. outer, mm				
6	1/4	6.4-7.0	15.7	400	1600	100	0.32
8	5/16	7.9-8.5	17.3	350	1400	115	0.40
10	3/8	9.5-10.1	19.7	330	1320	130	0.52
12	1/2	12.7-13.5	23.0	275	1100	180	0.56
16	5/8	15.8-16.7	26.2	250	1000	200	0.72
19	3/4	18.8-19.8	30.1	215	850	240	0.88
25	1	25.4-26.4	38.9	165	650	300	1.28
31	1.1/4	31.8-33.0	49.5	125	500	420	2.20
38	1.1/2	38.1-39.3	55.9	90	360	500	3.51



# High pressure hoses EN 853 with increased working pressure



## BULAT 2 SN EN 853

**Hose construction:**






**Tube:** oil and water resistant rubber

**Reinforcement:** two high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 atM Working pressure bar	 atM Burst pressure bar	 MM Min. bend radius	Weight (kg/m)
mm	inch	 Inner , mm	 Max. outer, mm				
10	3/8	9,5-10,1	19,7	410	1640	130	0,54
12	1/2	12,7-13,5	23,0	350	1400	180	0,63
16	5/8	15,8-16,7	26,2	290	1160	200	0,75



## High pressure hoses EN 857



### 1SC EN 857

It has a smaller outer diameter and bend radius compared to 1SN EN 853

**Hose construction:**

**Tube:** oil and water resistant rubber

**Reinforcement:** one high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner, mm	Max. outer, mm				
6	1/4	6,4-6,9	13,3	225	900	75	0,19
8	5/16	7,9-8,5	14,5	215	850	85	0,20
10	3/8	9,5-10,1	16,9	180	720	90	0,25
12	1/2	12,7-13,5	20,4	160	640	130	0,34
16	5/8	15,8-16,7	23,0	130	520	150	0,51



# High pressure hoses EN 857



## 2SC EN 857

It has a smaller outer diameter and bend radius compared to 2SN EN 853

**Hose construction:**






**Tube:** oil and water resistant rubber

**Reinforcement:** two high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 Working pressure bar	 Burst pressure bar	 Min. bend radius	Weight (kg/m)
mm	inch	 Inner, mm	 Max. outer, mm				
8	5/16	7,9-8,5	16,0	350	1400	85	0,32
10	3/8	9,5-10,1	18,3	330	1320	90	0,42
12	1/2	12,7-13,5	21,5	275	1100	130	0,50
16	5/8	15,8-16,7	24,7	250	1000	170	0,61





## High pressure hoses EN 856



### 4 SP EN 856

**Hose construction:**






**Tube:** oil and water resistant rubber

**Reinforcement:** four high tensile spiral crossed steel wire braids, divided by a rubber layer






**Cover:** grease and weather resistant rubber

**Temperature range:** from -40°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 ATM	 ATM	 MM	Weight (kg/m)
mm	inch	 Inner, mm	 Max. outer, mm				
12	1/2	12,6-13,5	23,8-25,4	415	1660	230	0,85
16	5/8	15,8-16,7	27,4-29,0	350	1400	250	1,02
19	3/4	18,8-19,8	31,4-33,0	350	1400	300	1,40
25	1	25,4-26,4	38,5-40,9	280	1120	340	1,96

### 4 SH EN 856

Nominal diameter		Diameter		 ATM	 ATM	 MM	Weight (kg/m)
mm	inch	 Inner, mm	 Max. outer, mm				
19	3/4	19,1-19,8	31.4-33.0	420	1680	280	1.48
25	1	25,5-26,4	37.5-39.9	380	1520	340	1.96
31	1.1/4	32,0-33,0	43.9-47.1	325	1300	460	2.68
38	1.1/2	38,2-39,3	51.9-55.1	290	1160	560	2.76



# Frost resistant high pressure hoses EN 853



## MOROZ 1SN EN 853

**Hose construction:**

**Tube:** oil and water resistant rubber

**Reinforcement:** one high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner , mm	Max. outer, mm				
6	1/4	6.4-7.0	14.1	225	900	100	0.24
8	5/16	7.9-8.5	15.7	215	850	115	0.25
10	3/8	9.5-10.1	18.1	180	720	130	0.34
12	1/2	12.7-13.5	21.4	160	640	180	0.41
16	5/8	15.8-16.7	24.5	130	520	200	0.52
19	3/4	18.8-19.8	28.5	105	420	240	0.60
25	1	25.4-26.4	36.6	88	350	300	0.90
31	1.1/4	31.8-33.0	44.8	63	250	420	1.21
38	1.1/2	38.1-39.3	52.1	50	200	500	2.28





## MOROZ 2SN EN 853

### Hose construction:

**Tube:** oil and water resistant rubber

**Reinforcement:** two high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner, mm	Max. outer, mm				
6	1/4	6.4-7.0	15.7	400	1600	100	0.32
8	5/16	7.9-8.5	17.3	350	1400	115	0.40
10	3/8	9.5-10.1	19.7	330	1320	130	0.52
12	1/2	12.7-13.5	23.0	275	1100	180	0.56
16	5/8	15.8-16.7	26.2	250	1000	200	0.72
19	3/4	18.8-19.8	30.1	215	850	240	0.88
25	1	25.4-26.4	38.9	165	650	300	1.28
31	1.1/4	31.8-33.0	49.5	125	500	420	2.20
38	1.1/2	38.1-39.3	55.9	90	360	500	3.57



# Frost resistant high pressure hoses EN 857



## MOROZ 1SC EN 857

It has a smaller outer diameter and bend radius compared to MOROZ 1SN EN 853

### Hose construction:






**Tube:** oil and water resistant rubber

**Reinforcement:** one high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 atm Working pressure bar	 atm Burst pressure bar	 MM Min. bend radius	Weight (kg/m)
mm	inch	 Inner , mm	 Max. outer, mm				
6	1/4	6,4-6,9	13,3	225	900	75	0,19
8	5/16	7,9-8,5	14,5	215	850	85	0,20
10	3/8	9,5-10,1	16,9	180	720	90	0,25
12	1/2	12,7-13,5	20,4	160	640	130	0,34
16	5/8	15,8-16,7	23,0	130	520	150	0,51





## MOROZ 2SC EN 857

It has a smaller outer diameter and bend radius compared to MOROZ 2SN EN 853

### Hose construction:






**Tube:** oil and water resistant rubber

**Reinforcement:** two high tensile steel wire braid

**Cover:** grease and weather resistant rubber

**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		 Working pressure bar	 Burst pressure bar	 Min. bend radius	Weight (kg/m)
mm	inch	 Inner, mm	 Max. outer, mm				
8	5/16	7,9-8,5	16,0	350	1400	85	0,32
10	3/8	9,5-10,1	18,3	330	1320	90	0,42
12	1/2	12,7-13,5	21,5	275	1100	130	0,50
16	5/8	15,8-16,7	24,7	250	1000	170	0,61



# Frost resistant high pressure hoses EN 856



## MOROZ 4SP EN 856

### Hose construction:

**Tube:** oil and water resistant rubber

**Reinforcement:** four high tensile spiral crossed steel wire braids, divided by a rubber layer

**Cover:** grease and weather resistant rubber

**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner, mm	Max. outer, mm				
12	1/2	12,6-13,5	23,8-25,4	415	1660	230	0,85
16	5/8	15,8-16,7	27,4-29,0	350	1400	250	1,02
19	3/4	18,8-19,8	31,4-33,0	350	1400	300	1,40
25	1	25,4-26,4	38,5-40,9	280	1120	340	1,96





## MOROZ 4SH EN 856

**Hose construction:**

**Tube:** oil and water resistant rubber

**Reinforcement:** four high tensile spiral crossed steel wire braids, divided by a rubber layer

**Cover:** grease and weather resistant rubber

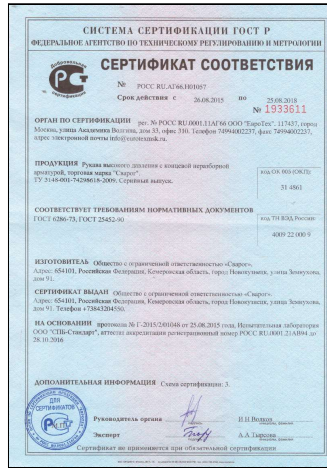
**Temperature range:** from -50°C to +70°C

**Operating temperature:** with hydraulic fluids from -40°C to +100°C,  
with water-based fluids from -40°C to +70°C  
with water from 0°C to +70°C

Nominal diameter		Diameter		Working pressure bar	Burst pressure bar	Min. bend radius MM	Weight (kg/m)
mm	inch	Inner, mm	Max. outer, mm				
19	3/4	19.1-19.8	31.4-33.0	420	1680	280	1.48
25	1	25.5-26.4	37.5-39.9	380	1520	340	1.96
31	1.1/4	32.0-33.0	43.9-47.1	325	1300	460	2.68
38	1.1/2	38.2-39.3	51.9-55.1	290	1160	560	2.76



## Certificates, diplomas



## Our contact

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