

# Штоки полые никелированные и хромированные

## NIMET NICRO NCT

### Технические характеристики

|                             |                            |                                 |                                |                          |
|-----------------------------|----------------------------|---------------------------------|--------------------------------|--------------------------|
| Алматы (7273)495-231        | Иваново (4932)77-34-06     | Магнитогорск (3519)55-03-13     | Ростов-на-Дону (863)308-18-15  | Тольятти (8482)63-91-07  |
| Ангарск (3955)60-70-56      | Ижевск (3412)26-03-58      | Москва (495)268-04-70           | Рязань (4912)46-61-64          | Томск (3822)98-41-53     |
| Архангельск (8182)63-90-72  | Иркутск (395)279-98-46     | Мурманск (8152)59-64-93         | Самара (846)206-03-16          | Тула (4872)74-02-29      |
| Астрахань (8512)99-46-04    | Казань (843)206-01-48      | Набережные Челны (8552)20-53-41 | Саранск (8342)22-96-24         | Тюмень (3452)66-21-18    |
| Барнаул (3852)73-04-60      | Калининград (4012)72-03-81 | Нижний Новгород (831)429-08-12  | Санкт-Петербург (812)309-46-40 | Ульяновск (8422)24-23-59 |
| Белгород (4722)40-23-64     | Калуга (4842)92-23-67      | Новокузнецк (3843)20-46-81      | Саратов (845)249-38-78         | Улан-Удэ (3012)59-97-51  |
| Благовещенск (4162)22-76-07 | Кемерово (3842)65-04-62    | Ноябрьск (3496)41-32-12         | Севастополь (8692)22-31-93     | Уфа (347)229-48-12       |
| Брянск (4832)59-03-52       | Киров (8332)68-02-04       | Новосибирск (383)227-86-73      | Симферополь (3652)67-13-56     | Хабаровск (4212)92-98-04 |
| Владивосток (423)249-28-31  | Коломна (4966)23-41-49     | Омск (3812)21-46-40             | Сочи (862)225-72-31            | Чебоксары (8352)28-53-07 |
| Владикавказ (8672)28-90-48  | Кострома (4942)77-07-48    | Орел (4862)44-53-42             | Ставрополь (8652)20-65-13      | Челябинск (351)202-03-61 |
| Владимир (4922)49-43-18     | Краснодар (861)203-40-90   | Оренбург (3532)37-68-04         | Сыктывкар (8212)25-95-17       | Череповец (8202)49-02-64 |
| Волгоград (844)278-03-48    | Красноярск (391)204-63-61  | Пенза (8412)22-31-16            | Тамбов (4752)50-40-97          | Чита (3022)38-34-83      |
| Вологда (8172)26-41-59      | Курск (4712)77-13-04       | Петрозаводск (8142)55-98-37     | Сургут (3462)77-98-35          | Якутск (4112)23-90-97    |
| Воронеж (473)204-51-73      | Курган (3522)50-90-47      | Псков (8112)59-10-37            | Тверь (4822)63-31-35           | Ярославль (4852)69-52-93 |
| Екатеринбург (343)384-55-89 | Липецк (4742)52-20-81      | Пермь (342)205-81-47            |                                |                          |
| Россия (495)268-04-70       | Казахстан (772)734-952-31  | Киргизия (996)312-96-26-47      |                                |                          |

## NICKEL-CHROME PLATED STEEL TUBES

**NCT**

NiCro NCT - E355+SR  
NiCro NCT - P460N+N  
NiCro NCT - 20MnV6

In spite of the well known oxidation resistance, chrome plating has its limitations when exposed to aggressive environments.

Our solution in this case is nickel-chrome plating, a process meant to give products more durability even in high salinity, high humidity and heavy polluted environments.

The tubes are replacing the solid piston rods in systems where the total weight needs to be minimized.

## STEEL GRADES CORRESPONDENTS

| EN    | Werkstoff | DIN    | B.S. | UNI      | JIS     | GOST   | AISI / SAE / ASTM |
|-------|-----------|--------|------|----------|---------|--------|-------------------|
| E355  | 1.0580    | St52   | CFS5 | Fe510    | STKM19A | St6sp  | 1524 / 1024       |
| P460N | 1.8905    | StE460 | 55C  | FeE460KG | -       | 18G2AF | -                 |
| -     | 1.5217    | 20MnV6 | 55M  | -        | -       | -      | A572              |

## CHEMICAL COMPOSITION - IN % BY WEIGHT

| Steel grade | C           | Si          | Mn          | P          | S          | Cr        | Mo        | Ni        | V           | Cu        | N          |
|-------------|-------------|-------------|-------------|------------|------------|-----------|-----------|-----------|-------------|-----------|------------|
| E355        | max. 0.22   | max. 0.55   | max. 1.60   | max. 0.025 | max. 0.025 | -         | -         | -         | -           | -         | -          |
| P460N       | max. 0.20   | max. 0.60   | 1.00 ÷ 1.70 | max. 0.025 | max. 0.020 | max. 0.30 | max. 0.10 | max. 0.80 | max. 0.20   | max. 0.70 | max. 0.020 |
| 20MnV6      | 0.16 ÷ 0.22 | 0.10 ÷ 0.50 | 1.30 ÷ 1.70 | max. 0.035 | max. 0.035 | -         | -         | -         | 0.08 ÷ 0.20 | -         | -          |

\*Cr+Mo+Ni = max. 0.63

## MECHANICAL PROPERTIES

| Steel grade | Tensile strength                    | Yield point                            | Elongation (longitudinal) | Impact energy (longitudinal direction) | Hardness ***                 | Norm                                      |
|-------------|-------------------------------------|----------------------------------------|---------------------------|----------------------------------------|------------------------------|-------------------------------------------|
|             | R <sub>m</sub><br>N/mm <sup>2</sup> | R <sub>p0.2</sub><br>N/mm <sup>2</sup> | A <sub>5</sub><br>%       | KV <sub>2</sub><br>J                   | Brinell<br>N/mm <sup>2</sup> |                                           |
| E355+SR     | min. 580                            | min. 450                               | min. 10                   | (min. 27J / -20°C) **                  | min. 175                     | EN 10305-1                                |
| P460N+N     | 560 - 730                           | min. 460 *                             | min. 19                   | min. 40J / -20°C                       | 170 - 220                    | EN 10216-3                                |
| 20MnV6+N    | 550 - 800                           | min. 450                               | min. 22                   | min. 27J / -20°C                       | 165 - 240                    | Technical data according to internal norm |

SR = stress-relieved, N = normalized

\* Wall thickness ≤ 12 mm

\*\* On request

\*\*\* The hardness values is for information only

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Outside diameter - OD Ø30 - 140 mm

Inside diameter - ID see standard dimensions range

Outside tolerance - OD ISO f7 / ISO f8 / other, on request

Roundness - OD max. 1/2 from diameter tolerance

Standard lengths 5.000 - 6.400 mm

Special lengths On request we can offer cut to fix lengths pieces and special lengths up to max. 6.400 mm

Surface roughness - OD Ra: max. 0.20 µm

| NiCro 150 | NiCro 350 | NiCro 500 |
|-----------|-----------|-----------|
|-----------|-----------|-----------|

Nickel layer thickness min. 10 µm min. 30 µm min. 35 µm

Chrome layer thickness min. 20 µm min. 20 µm min. 25 µm

Nickel layer microhardness min. 300 HV0.1

Chrome layer microhardness min. 900 HV0.1

Straightness max. 0.25 mm / 1000 mm

## TABLE OF DIMENSIONS OD TOLERANCE

| Diameter<br>mm | ISO f7<br>µm | ISO f8<br>µm |
|----------------|--------------|--------------|
| 18 < Ø ≤ 30    | -20 / -41    | -20 / -53    |
| 30 < Ø ≤ 50    | -25 / -50    | -25 / -64    |
| 50 < Ø ≤ 80    | -30 / -60    | -30 / -76    |
| 80 < Ø ≤ 120   | -36 / -71    | -36 / -90    |
| 120 < Ø ≤ 140  | -43 / -83    | -43 / -106   |

## STANDARD DIMENSIONS RANGE

| Outside Diameter<br>mm | 30  | 32 | 35  | 40  | 45  | 50  | 55  | 60  | 63 | 65  | 70  | 75  | 80  | 85 | 90  | 100 | 110 | 120 | 140 |
|------------------------|-----|----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|
| Inside Diameter<br>mm  | 15  | 16 | 25  | 20  | 25  | 30  | 35  | 40  | 43 | 45  | 50  | 55  | 60  | 65 | 70  | 80  | 90  | 100 | 120 |
|                        | -   | -  | -   | 30  | 35  | 40  | 45  | 50  | -  | 55  | 60  | 65  | 70  | -  | 80  | 90  | -   | -   | -   |
| Wall thickness<br>mm   | 7.5 | 8  | 5   | 10  | 10  | 10  | 10  | 10  | 10 | 10  | 10  | 10  | 10  | 10 | 10  | 10  | 10  | 10  | 10  |
|                        | 5   | 6  | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 5  | 7.5 | 7.5 | 7.5 | 7.5 | 5  | 7.5 | 7.5 | 7.5 | -   | -   |
|                        | -   | -  | -   | 5   | 5   | 5   | 5   | 5   | -  | 5   | 5   | 5   | 5   | -  | 5   | 5   | -   | -   | -   |

## CORROSION RESISTANCE LEVELS

| Diameter<br>mm | NiCro 150             |                      | NiCro 350              |                      | NiCro 500             |                      |
|----------------|-----------------------|----------------------|------------------------|----------------------|-----------------------|----------------------|
|                | NSS                   | AASS                 | NSS                    | AASS                 | NSS                   | AASS                 |
| Ø30 - 140      | rating 10 after 500 h | rating 10 after 150h | rating 10 after 1000 h | rating 10 after 350h | rating 10 after 1500h | rating 10 after 500h |

Tested in our own laboratory according to ISO 9227, evaluated according to ISO 10289.

## NICKEL-CHROME PLATED STEEL TUBES

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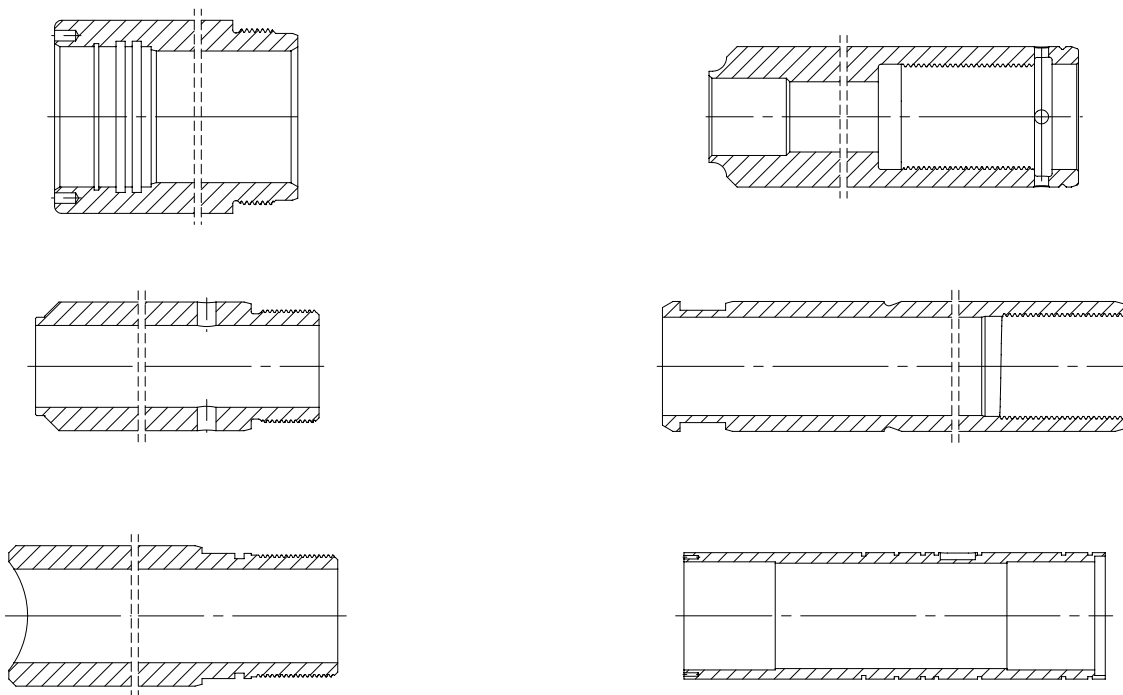
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## CUSTOMIZED MACHINING



## STORAGE AND HANDLING RECOMMENDATIONS

- Keep the products stored in dry and covered spaces.
- Do not expose for a long time the bars or tubes to the sunlight or to very low temperatures.
- For storage, preferable to use rubber supports or wood lined supports; direct contact with the floor and steel supports that are not lined with soft materials must be avoided.
- Whenever possible, please use the crane to load or unload the bundles; when you use the fork lifts please avoid the direct contact of the forks with the products.
- Always lift the bundles using textile slings. Don't use metal slings during handling of bundles.
- Always keep dry the cardboard tubes that protect the chromed products.

|                                    |                                   |                                        |                                       |                                  |
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| <b>Благовещенск</b> (4162)22-76-07 | <b>Кемерово</b> (3842)65-04-62    | <b>Ноябрьск</b> (3496)41-32-12         | <b>Севастополь</b> (8692)22-31-93     | <b>Уфа</b> (347)229-48-12        |
| <b>Брянск</b> (4832)59-03-52       | <b>Киров</b> (8332)68-02-04       | <b>Новосибирск</b> (383)227-86-73      | <b>Симферополь</b> (3652)67-13-56     | <b>Хабаровск</b> (4212)92-98-04  |
| <b>Владивосток</b> (423)249-28-31  | <b>Коломна</b> (4966)23-41-49     | <b>Омск</b> (3812)21-46-40             | <b>Смоленск</b> (4812)29-41-54        | <b>Чебоксары</b> (8352)28-53-07  |
| <b>Владикавказ</b> (8672)28-90-48  | <b>Кострома</b> (4942)77-07-48    | <b>Орел</b> (4862)44-53-42             | <b>Сочи</b> (862)225-72-31            | <b>Челябинск</b> (351 )202-03-61 |
| <b>Владимир</b> (4922)49-43-18     | <b>Краснодар</b> (861 )203-40-90  | <b>Оренбург</b> (3532)37-68-04         | <b>Ставрополь</b> (8652)20-65-13      | <b>Череповец</b> (8202)49-02-64  |
| <b>Волгоград</b> (844)278-03-48    | <b>Красноярск</b> (391)204-63-61  | <b>Пенза</b> (8412)22-31-16            | <b>Сыктывкар</b> (8212)25-95-17       | <b>Чита</b> (3022)38-34-83       |
| <b>Вологда</b> (8172)26-41-59      | <b>Курск</b> (4712)77-13-04       | <b>Петрозаводск</b> (8142)55-98-37     | <b>Тамбов</b> (4752)50-40-97          | <b>Якутск</b> (4112)23-90-97     |
| <b>Воронеж</b> (473)204-51-73      | <b>Курган</b> (3522)50-90-47      | <b>Псков</b> (8112)59-10-37            | <b>Сургут</b> (3462)77-98-35          | <b>Ярославль</b> (4852)69-52-93  |
| <b>Екатеринбург</b> (343)384-55-89 | <b>Липецк</b> (4742)52-20-81      | <b>Пермь</b> (342)205-81-47            | <b>Тверь</b> (4822)63-31-35           |                                  |
| <b>Россия</b> (495)268-04-70       | <b>Казахстан</b> (772)734-952-31  | <b>Киргизия</b> (996)312-96-26-47      |                                       |                                  |