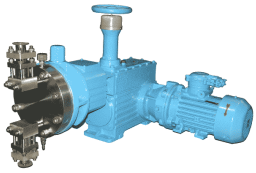
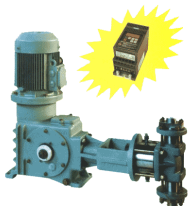
Dosing electro pumps НД(р,э), ГНД(р,э) and multiplunger aggregates on their basis



RINAR MAŠĪNBŪVE



Dosing electro pumps of НД type are designed for volumetric forcing dosing of neutral and aggressive liquids, emulsions and suspensions with kinematic viscosity from 0,0035 to 8 cm^2/sec, with maximum density up to 2000 kg/m^3, with pH value 0…14, temperature from 258 to 473 K (from -15°C to +200°C), with concentration of solid nonabrasive phase up to 10% by weight, with maximum density of solid particles up to 2300 kg/m^3, with the size of solid nonabrasive phase not more than 1% of internal diameter of conjunctive branch pipes.

Dosing electro pumps are used technological processes of chemical, petrochemical, heat-and-power engineering and other fields of industry.

Dosing electro pumps are produced according to ОСТ 26-06-2003-77 “Plunger dosing pumps and aggregates on their basis. Technical specifications”.

Aggregate parameters:

- feed, max.	- up to 15000 liters/hour
- outlet pressure, max.	-up to 1000 kg/cm^2
- temperature of working environment	- from -15 to +200°C
- feed regulation diapason	- from 25 to 100%
- electromotor power	- 0,25; 0,37; 0,75; 1,1; 1,5; 2,2; 3,0; 4,0 kWt

Feed can be regulated:

- manually when the engine is stopped НД...
- manually with working and stopped engine НД...Р
- manually and automatically distantly by changing length of plungers stroke by multiturn electrical working mechanism (MEM)
- manually and automatically distantly by changing rotation frequency of electromotor (using the inverting element) НД...Э

Flowing part is made of high-alloy stainless steels and alloys according to GOST 5632-72 or other chemically stable materials.

Delivery set may include: spare parts, electro launching installation, air chambers (pressure snubbers).

On single-plunger pump basis multi-plunger aggregates 2-6НД... are produced using hydro cylinders of basic single-plunger aggregate series.

НДЭ aggregates completed with frequency changers (inverting elements) allow to adjust productivity (feed) of the pump distantly automatically by changing rotation frequency of electro motor.

Delivery set of НДЭ type pumps include inversing elements, which provide following functional capabilities:

- automatic and distant regulation of feed of the aggregate in working diapason
- local control from control panel
- electro motors protection from overload
- possibility of assigning the time of acceleration and slowdown of the electro motor
- faultiness warning: increased current of the motor, inversing elements temperature increase, inner interface or inner program failure, phase break, earth connection, etc.

Current inversing elements characteristics: 3 inputs – 4…20 mA analog, 1 output – 4…20 mA analog.

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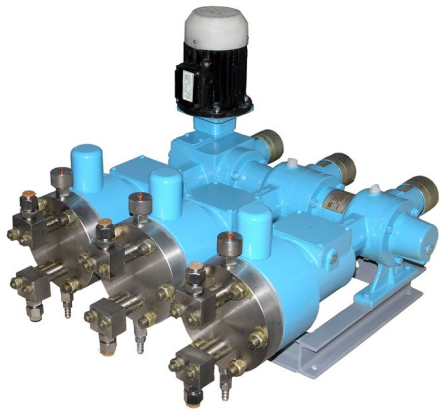


1. Dosing multiplunger electro pumps 2-6 НД...Р and 2-6 НД...Э

Dosing multiplunger electro pump (further in the text – pump) is intended for simultaneous forcing dosing of several neutral or aggressive liquids, suspensions with kinematic viscosity from 0,0035 to 8 cm^2/sec, with maximal density up to 2000 kg/m^3, with pH value 0…14, temperature from -15 to +200°C, with concentration of solid nonabrasive phase up to 10% by weight, with maximum density of solid particles up to 2300 kg/m3, with the size of solid nonabrasive phase not more than 1% of internal diameter of conjunctive branch pipes in technological processes of chemical, petrochemical, heat-and-power engineering, food and other fields of industry.

The field of pumps use is determined by durability of flowing part material and durability of sealing materials.

Flowing part material	- stainless steel
Dosing precision category, not more than %	- 1,0
Feed coefficient	- 92,5
Allowed vacuum-gauge suction height, m	- 3
Plungers stroke length regulation diapason, mm:	
- maximal	- from 0 to 60
- working	- from 15 to 60
Total feed, max.	- up to 15000 l/h
Outlet pressure, max.	- up to 1000 kg/cm^2
Temperature of working environment	- from -15 to +200°C

Feed regulation in pumps with “Э” index:

1. feed of every hydro cylinder is regulated by changing the length of plungers stroke by multiturn electrical working mechanism (MEM)
2. if the pump is supplied with inversing element (frequency changer), then regulation of feed is done by changing the rotation frequency of electro motor.

Notice.

If the pump is supplied with MEM mechanisms, feed of every hydro cylinder can be regulated separately automatically distantly.

If the pump is supplied with inversing element, regulation of feed is made synchronously for all hydro cylinders at once.

Certificate of conformance № РОСС RU.АИ50.Н00951

Short list of production

Own manufacture.

НД (ND) dosing pumps with manual regulation of feed when the engine is stopped

Type	Q, liters/hour	PN max, bar	Electromotor, kWt
НД 63/400 К14 МА(В)	63	400	3,0
НД 2,5 100/250 К14 МА(В)	100	250	3,0
НД 2,5 160/160 К14 МА(В)	160	160	3,0
НД 2,5 250/100 К14 МА(В)	250	100	3,0
НД 2,5 400/63 П14 МА(В)	400	63	3,0
НД 2,5 630/32 П14 МА(В)	630	32	3,0
НД 2,5 1000/20 П14 МА(В)	1000	20	3,0
НД 2,5 1000/25 П14 МА(В)	1000	25	3,0
НД 2,5 1600/16 П14 МА(В)	1600	16	3,0
НД 2,5 2500/10 П14 МА(В)	2500	10	3,0
НД 20/800 К14МА(В)	20	800	3,0
НД 25/1000 К14МА(В)	25	1000	3,0
НД2,5 3200/10К14МА(В)	3200	10	4,0
НД 16/400 К14 МА(В)	16	400	1,1
НД 2,5 25/250 К14 МА(В)	25	250	1,1
НД 2,5 40/160 К14 МА(В)	40	160	1,1
НД 2,5 63/100 К14 МА(В)	63	100	1,1
НД 2,5 100/63 К14 МА(В)	100	63	1,1
НД 2,5 160/40 К14 МА(В)	160	40	1,1
НД 2,5 250/25 К14 МА(В)	250	25	1,1
НД 2,5 400/10 К14 МА(В)	400	10	1,1
НД 2,5 400/16 К14 МА(В)	400	16	1,1
НД 2,5 630/10 П14 МА(В)	630	10	1,1
НД 2,5 1000/6.3 К14 МА(В)	1000	6,3	1,1
НД 2,5 1600/4 К14 МА(В)	1600	4	1,1
НД 1,0 100/250 К14А(В)	100	250	3,0
НД 1,0 1000/20 П14 А(В)	1000	20	3,0
НД 1,0 1600/16 П14 А(В)	1600	16	3,0
НД 1,0 2500/10 П14 А(В)	2500	10	3,0
НД 20/400 К14 А(В)	20	400	3,0
ГНД 160/40 К А(В)	160	40	1,1
ГНД 250/25 К А(В)	250	25	1,1
ГНД 300/25 КА(В)	300	25	1,1
ГНД 25/250 К А(В)	25	250	1,1
ГНД 400/16 К А(В)	400	16	1,1
ГНД 630/10 К А(В)	630	10	1,1
ГНД 1000/6,3 К А(В)	1000	6,3	1,1
ГНД 1600/4 К А(В)	1600	4	1,1
ГНД 2500/2 К А(В)	2500	2	1,1
ГНД 630/32 К А(В)	630	32	3,0
ГНД 1000/20 К А(В)	1000	20	3,0
ГНД 1600/16 К А(В)	1600	16	3,0
ГНД 2500/10 К А(В)	2500	10	3,0

Silphon ND dosing pumps

(glass hydraulic jack, fluoroplastic plunger)

Type	Q, liters/hour	PN max, bar	Electromotor, kWt
НД 160/3,5 СА	160	3,5	0,25

NDR dosing pumps with manual feed regulation with working engine

Type	Q, litres/hour	PN max, bar	Electromotor, kWt
НДр 63/400 К14 МА(В)	63	400	3,0
НД 2,5р 100/250 К14 МА(В)	100	250	3,0

НД 2,5р 160/160 К14 МА(В)	160	160	3,0
НД 2,5р 250/100 К14 МА(В)	250	100	3,0
НД 2,5р 400/63 П14 МА(В)	400	63	3,0
НД 2,5р 630/32 П14 МА(В)	630	32	3,0
НД 2,5р 1000/20 П14 МА(В)	1000	20	3,0
НД 2,5р 1000/25 П14 МА(В)	1000	25	3,0
НД 2,5р 1600/16 П14 МА(В)	1600	16	3,0
НД 2,5р 2500/10 П14 МА(В)	2500	10	3,0
НДр 20/800 К14МА(В)	20	800	3,0
НДр 25/1000 К14МА(В)	25	1000	3,0
НД2,5р 3200/10К14МА(В)	3200	10	4,0
НДр 16/400 К14 МА(В)	16	400	1,1
НД 2,5р 25/250 К14 МА(В)	25	250	1,1
НД 2,5р 40/160 К14 МА(В)	40	160	1,1
НД 2,5р 63/100 К14 МА(В)	63	100	1,1
НД 2,5р 100/63 К14 МА(В)	100	63	1,1
НД 2,5р 160/40 К14 МА(В)	160	40	1,1
НД 2,5р 250/25 К14 МА(В)	250	25	1,1
НД 2,5р 400/16 К14 МА(В)	400	16	1,1
НД 2,5р 630/10 П14 МА(В)	630	10	1,1
НД 2,5р 1000/6.3 К14 МА(В)	1000	6,3	1,1
НД 2,5р 1600/4 К14 МА(В)	1600	4	1,1
НД Р 2,5/400 К13МА(В)	2,5	400	0,25
НД 1,0 Р 1,6/63 К13МА(В)	1,6	63	0,25
НД1,0 Р 6,3/160К13МА(В)	6,3	160	0,25
НД 1,0 Р 10/100 К13МА(В)	10	100	0,25
НД 1,0 Р 16/63 К13МА(В)	16	63	0,25
НД 1,0 Р 25/40 К13МА(В)	25	40	0,25
НД 1,0 Р 40/25 К13МА(В)	40	25	0,25
НД 0,5 Р 63/16 К13МА(В)	63	16	0,25
НД 0,5 Р 100/10 К13МА(В)	100	10	0,25
НД Р 2,5/400 К14МА(В)	2,5	400	0,25
НД 1,0 Р 1,6/63 К14МА(В)	1,6	63	0,25
НД1,0 Р 6,3/160К14МА(В)	6,3	160	0,25
НД 1,0 Р 10/100 К14МА(В)	10	100	0,25
НД 1,0 Р 16/63 К14МА(В)	16	63	0,25
НД 1,0 Р 25/40 К14МА(В)	25	40	0,25
НД 1,0 Р 40/25 К14МА(В)	40	25	0,25
НД 0,5 Р 63/16 К14МА(В)	63	16	0,25
НД 0,5 Р 100/10 К14МА(В)	100	10	0,25
ГНД Р 40/25 КА(В)	40	25	0,25
ГНД Р 25/40 КА(В)	25	40	0,25
ГНД Р 16/63 КА(В)	16	16	0,25
ГНД Р 63/16 КА(В)	63	16	0,25
ГНД Р 10/10КА(В)	10	100	0,25
ГНД Р 100/10 КА(В)	100	10	0,25
ГНД Р 100/250 КА(В)	100	250	3,0
ГНД Р 400/40 КА(В)	400	40	3,0
ГНД Р 630/32 КА(В)	630	32	3,0
ГНД Р 1000/20 КА(В)	1000	20	3,0
ГНД Р 1600/16 КА(В)	1600	16	3,0
ГНД Р 2500/10 КА(В)	2500	10	3,0

NDE dosing pumps with automatic distant regulation of feed by changing the length of plungers stroke (with multiturn electric mechanism – MEM)

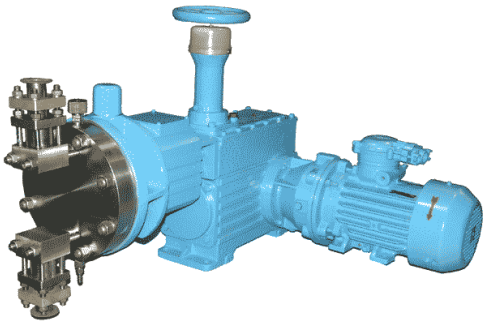
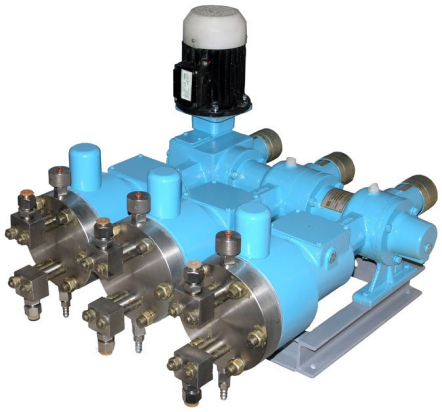
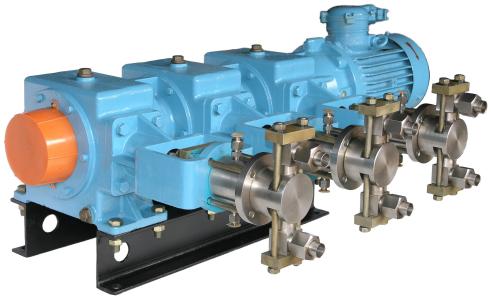
Type	Q, liters/hour	PN max, bar	Electromotor, kWt
НД Э 2,5/400 К13МА(В)	2,5	400	0,25
НД 1,0 Э 1,6/63 К13МА(В)	1,6	63	0,25
НД1,0 Э 6,3/160К13МА(В)	6,3	160	0,25
НД 1,0 Э 16/63 К13МА(В)	16	63	0,25

НД 1,0 Э 25/40 К13МА(В)	25	40	0,25
НД 1,0 Э 40/25 К13МА(В)	40	25	0,25
НД 0,5 Э 63/16 К13МА(В)	63	16	0,25
НД 0,5 Э 100/10 К13МА(В)	100	10	0,25
НД 1,0 Э 10/100 К13МА(В)	10	100	0,25
НД Э 2,5/400 К14МА(В)	2,5	400	0,25
НД 1,0 Э 1,6/63 К14МА(В)	1,6	63	0,25
НД1,0 Э 6,3/160К14МА(В)	6,3	160	0,25
НД 1,0 Э 10/100 К14МА(В)	10	100	0,25
НД 1,0 Э 16/63 К14МА(В)	16	63	0,25
НД 1,0 Э 25/40 К14МА(В)	25	40	0,25
НД 1,0 Э 40/25 К14МА(В)	40	25	0,25
НД 0,5 Э 63/16 К14МА(В)	63	16	0,25
НД 0,5 Э 100/10К14МА(В)	100	10	0,25

Comment: the range of feed regulation: 0...100%

Example of aggregates name
НД1,0Р 300/160К14МА:
НД – single plunger aggregate
1,0 – index of dosing precision, %
Р – manual regulation of feed
300 – feed, liters/hour
160 – outlet pressure, max. bar
К – material of hydraulic part – stainless steel
А (В) – electromotor type

In the list are given basic aggregates.
On demand of the customer we can produce and supply aggregates with necessary characteristics which are not included in the list above.

Short list of production

Own manufacture.