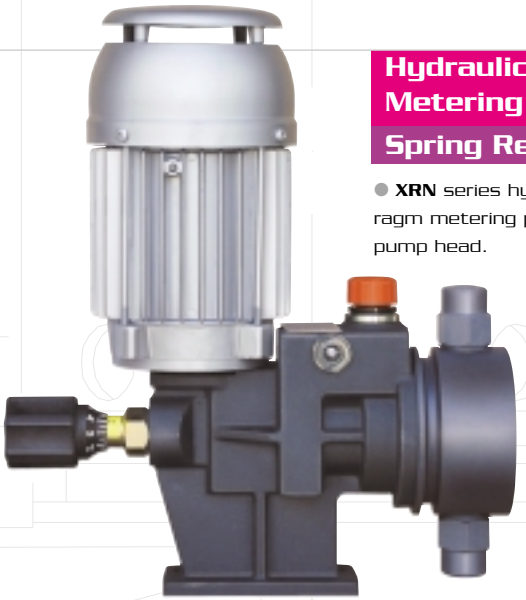
TECHNICAL DATA

TYPE	STROKES /1'	MAX FLOW RATE l/h	MAX PRESSURE BAR A 1PH	MAX PRESSURE BAR A 3PH	MAX PRESSURE BAR P 1PH	MAX PRESSURE BAR P 3PH	CONNECTIONS THREADED G.F	CONNECTIONS FLANGED UNI	CONNECTIONS FLANGED ANSI
50 Hz									
XRN2.30	28	**1,8**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	36	**2,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	55	**3,8**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	72	**5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	85	**5,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	111	**7,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	145	**11**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN6.30	55	**10**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	72	**14**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	85	**20**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	111	**23**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	145	**30**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	72	**26**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	85	**32**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	111	**42**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	145	**54**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	170	**65**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	72	**42**	7	10	7	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	85	**50**	7	10	7	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	111	**66**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	145	**87**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	170	**105**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"
60 Hz									
XRN2.30	33	**2,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	43	**3**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	51	**3,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	67	**4,5**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	87	**6**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	103	**7**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN2.30	133	**10**	20	20	10	10	1/4" g.f.- BSPF	DN 15	1/2"
XRN6.30	51	**10**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	67	**14**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	87	**20**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	103	**24**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.30	133	**30**	16	20	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	67	**24**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	87	**33**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	103	**40**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	133	**50**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.38	174	**68**	10	15	10	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	67	**38**	7	10	7	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	87	**50**	7	10	7	10	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	103	**62**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	133	**80**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"
XRN6.48	174	**105**	5	8	5	8	3/8" g.f.- BSPF	DN 15	1/2"



Hydraulic Diaphragm Metering Pumps

Spring Return

● **XRN** series hydraulic diaphragm metering pump with **PVC** pump head.

Flow Rate:
- Max flow rate **105 L/h.**

Motors:
- Gamar (Special) IP55 - CL.F - IEC34-1 - 4 Poles
- 63 Threephase - 0,18 kW
  - Δ - 230 V - **50** Hz
  - Y - 400 V - **50** Hz
  - Δ - 220÷290 V - **60** Hz
  - Y - 380÷500 V - **60** Hz
- Singlephase 63 - 0,09 kW - 4 Poles - IP55 - I.CL.F - SI - IEC 34-1
  - 220÷240 V - **50** Hz
  - 110÷115 V - **50** Hz
  - 220÷230 V - **60** Hz
  - 110÷115 V - **60** Hz

Pump:
- Single

Adjustment:
- Via Micrometer knob

Material:
- Aluminium Casing

Stroke:
- **2/6** mm.

Weigth:
- **10** Kg

MATERIALS OF CONSTRUCTION

PARTS	A	P	P11	P32
LIQUID END	AISI 316L	PVC	PVC	PVC
VALVE GUIDE	PE	PE	PE	PE
VALVE SEAT	AISI 316L	PVC	AISI 316L	INCOLOY 825
VALVE	AISI 316L	PIREX	AISI 316L	HASTELLOY C-276
VALVE SEAL	VITON (*FPM*)	VITON (*FPM*)	VITON (*FPM*)	VITON (*FPM*)
VALVE HOUSING	AISI 316L	PVC	PVC	PVC
DIAPHRAGM	TEFLON (*PTFE*)	TEFLON (*PTFE*)	TEFLON (*PTFE*)	TEFLON (*PTFE*)

BUILT-IN RELIEF VALVE SETTING WORKING PRESSURE

BUILT-IN RELIEF VALVE STD SETTINGS	MAX WORKING PRESSURE
5 bar	**4** bar
7 bar	**5,5** bar
8 bar	**6,5** bar
10 bar	**8,5** bar
15 bar	**13** bar
17 bar	**14,5** bar
20 bar	**17** bar

MODEL NUMBER

XRN | 2. | 30 | P | 85 | F | Z | MU | G

KEY TO SYMBOLS

	PUMP TYPE
	PLUNGER STROKE: 2 - 6
	Ø PLUNGER: 30 - 38 - 48
P	PVC VERSION
A	AISI-316L VERSION
P11	AISI-316L VALVES & SEATS
P32	SEAT: INCOLOY 825-VALES: HASTELLOY®C-276
G	CLOCK-TYPE ADJUSTMENT
MU	UNIFIED MOTOR
Z	4÷20 mA ELECTRIC ACTUATOR
W	3÷15 BAR PNEUMATIC ACTUATOR
F	UNI-DIN FLANGED CONNECTIONS
FA	ANSI FLANGED CONNECTIONS
N°	STROKES/m: 28 - 36 - 55 - 72 - 85 - 111 - 145 - 170

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The XRN pump design benefits from the technology developed for our MX series process hydraulic diaphragm pumps.
Integral hydraulic diaphragm pump with built-in relief valve, air-bleed valve and mechanically actuated oil replenishing. The technical innovation lies in the combination of a process pump head of the MX series, with a spring return operating mechanism.
The totally enclosed monobloc construction with no external moving parts and the built-in relief valve ensure full compliance with EC machine safety standard.

CONSTRUCTION CHARACTERISTICS

1. **BUILT-IN RELIEF VALVE**
Eliminates the cost, installation and maintenance of an external relief valve.

2. **HYDRAULIC SYSTEM**
In the mechanically actuated oil replenishing system the restored volume is determined by the diaphragm position at the limit of the suction stroke, which therefore controls the limit of delivery stroke deflection of the diaphragm caused by the plunger.

3. **CONNECTIONS**
Threaded BSPF. Flanged UNI/ANSI

4. **VALVES**
A wide range of materials (AISI 316L stainless steel, Pyrex, Ceramic, Hastelloy ® C-276) is available to handle various liquids. Specially designed pump heads are available for liquids with viscosity up to 22,000 cps.

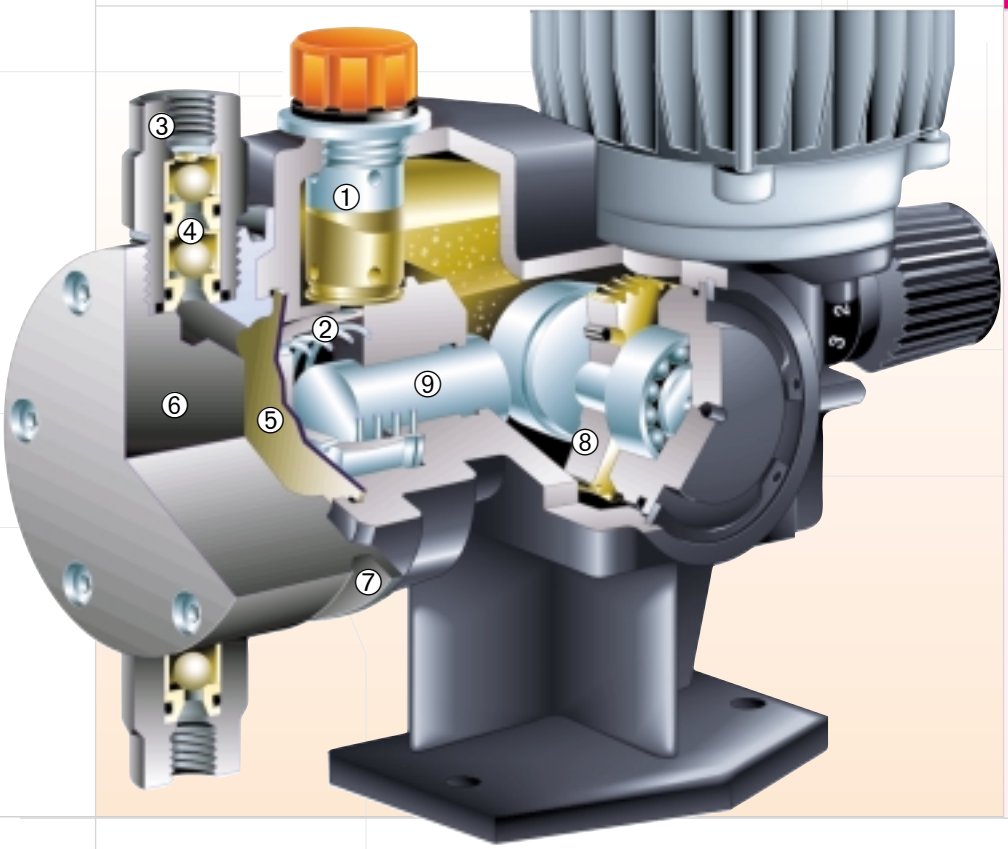
5. **DIAPHRAGM**
Pure PTFE with independent leak-free retention system allowing pump head maintenance without leakages.

6. **LIQUID END**
Machined from solid barstock.

7. **PUMP HEAD**
Drip groove to prevent corrosion of the pump casing.

8. **CRANK GEAR**
Supported in ball bearings, oil bath lubricated.

9. **PLUNGER**
No wearing parts; oil bath lubricated, sealess plunger.
The small leakage via the plunger-cylinder clearance is restored by the hydraulic replenishment system at each stroke.
No maintenance required.



GENERAL FEATURES

- OBL "XRN" series metering pumps are controlled-volume reciprocating pumps.
- The diaphragm operating mechanism, driven by a constant speed motor, is a spring-return cam.
The stroke rate of the plunger is determined by the oil-bathed worm reduction gear.
The discharge stroke is given by direct contact of the cam with the plunger, while the suction stroke is effected by the return spring.
- 0÷100 flow rate adjustment is achieved by limiting the return stroke of the plunger by means of a threaded stop with micrometer adjustment.
- The aluminium monobloc construction offers the advantage of a hydraulic system in a compact and economical design with few components.

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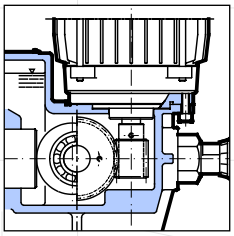
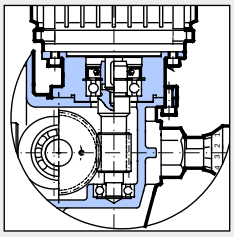
MOTORS

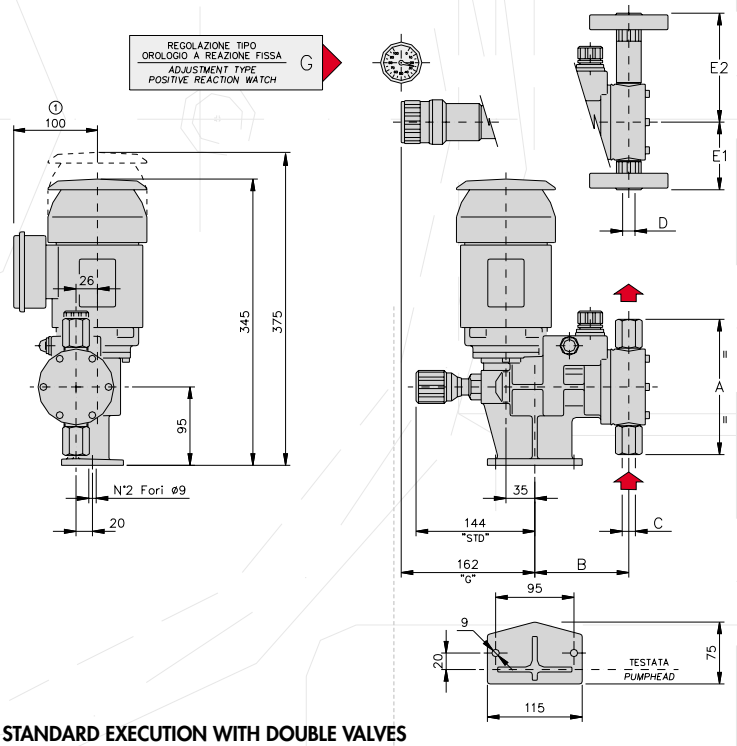
VERSIONS	TYPE	CODE	PHASES	SIZE	FORMA	CHARACTERISTIS
Motor "BASIC" version 	STD MOTORI (SPECIAL GAMAR)	/	THREE-PH	63	*	TEFC 0,18 kW 4 POLES 230/400 V 50/60 Hz IEC 34-1
		M1	SINGLE-PH	63	*	TEFC 0,09 kW 2 POLES 230 V 50 Hz IEC 34-1
Motor "UNEL-MEC" version 	STD MOTORS	MU	THREE-PH	63	B14	TEFC 0,18 kW 4 POLES 230/400 V 50/60 Hz IEC 34-1
		MU1	SINGLE-PH	63	B14	TEFC 0,09 kW 4 POLES 230 V 50 Hz IEC 34-1

* Special shaft and driving end.

OVERALL DIMENSIONS

ADVANTAGES

- The hydraulic system with its mechanically actuated oil replenishing (smart diaphragm) system overcomes many common suction and discharge problems.
- Maintenance is reduced to a minimum. The plunger operates in an oil bath, without packing, and maintains as-new volumetric efficiency even after 40,000 working hours. The diaphragm protected by the built-in relief valve and mechanically actuated oil-replenishing system, has a working life in excess of 40,000 hours.
- The diaphragm is held independently of the pump head, so that when the head is dismantled, the diaphragm is retained in the body and no oil is lost. This significantly improves the ease of maintenance.
- The inclusion of and integral safety valve results in some 50% cost saving on the installation.
- Excellent value for the money is achieved thanks to the few components mechanism, such as the direct plunger stroke adjustment and the cam mechanism.



STANDARD EXECUTION WITH DOUBLE VALVES

① WITH SINGLEPHASE MOTOR = 135

TYPE	AISI 316 L					PVC					"HV" (AISI 316L)					DN	
50/60Hz	A	B	C g.f.	E1	E2	A	B	Cg.f.	E1	E2	A	B	Cg.f.	E1	E2	UNI	ANSI
XRN2. 30	164	108	1/4"g.f. BSPF	82	132	171	121	1/4"g.f. BSPF	85,5	135,5	-	-	-	-	-	[AISI DN15-PN40] [PVC] DN15-PN10 UNI 2223/29	1/2" - 150 RF ANSI B16.5
XRN6. 30	164	108	3/8"g.f. BSPF	82	132	171	121	3/8"g.f. BSPF	85,5	135,5	162	114	1/2"g.f. BSPF	83	132		
XRN6. 38	184	121	3/8"g.f. BSPF	92	142	182	134	3/8"g.f. BSPF	91	141	172	125	1/2"g.f. BSPF	86	137		
XRN6. 48	184	121	3/8"g.f. BSPF	92	142	182	134	3/8"g.f. BSPF	91	141	172	125	1/2"g.f. BSPF	88	137		

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BASIC MODELS

XRN 2.30 P 85

- PVC pump head
- "GAMAR" 3-phase motor
- Threaded connections
- Max. flow rate 5,5 l/h
- Max. pressure 10 bar

XRN 6.30 A 85

- AISI 316L pump head
- "GAMAR" 3-phase motor
- Threaded connections
- Max. flow rate 17 l/h
- Max. pressure 20 bar

XRN 2.30 P 85 F MU

- PVC pump head
- 3-phase motor
- Flanged connections
- Max. flow rate 5,5 l/h
- Max. pressure 10 bar

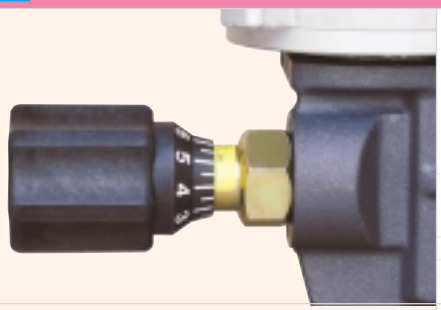
XRN 6.30 A 85 F MU

- AISI 316L pump head
- 3-phase motor
- Flanged connections
- Max. flow rate 17 l/h
- Max. pressure 20 bar

ADJUSTMENT SYSTEMS

- **Manual:** With 0-10 scale micrometer knob.
- **Electric:** Via **OBL** designed **Z** type 4÷20 *mA* electrical actuator.
- **Pneumatic:** Via of a 3÷15 PSI, type **W**, pneumatic actuator.

STANDARD MANUAL ADJUSTMENT



- 0÷100% adjustment by means of a micrometer knob.

MANUAL ADJUSTMENT ON DEMAND

- Flow rate adjustment is smooth and linear, and can be made whether the pump is running or stationary.

The non-gravity dial adjuster has a 0÷100% scale and will not lose the datum if turned over during transport.

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