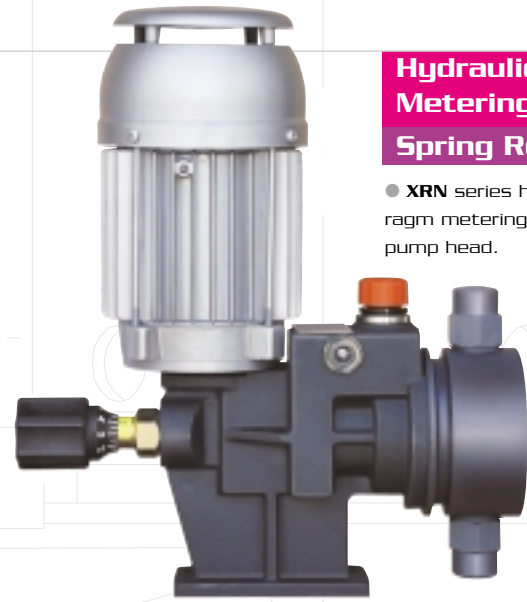




## TECHNICAL DATA

TYPE	STROKES /1'	MAX FLOW RATE l/h	MAX PRESSURE BAR				CONNECTIONS		
			A		P		THREADED	FLANGED	
			1PH	3PH	1PH	3PH	G.F	UNI	ANSI
<b>50 Hz</b>									
XRN2.30	28	1,8	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	36	2,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	55	3,8	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	72	5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	85	5,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	111	7,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	145	11	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN6.30	55	10	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	72	14	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	85	20	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	111	23	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	145	30	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	72	26	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	85	32	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	111	42	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	145	54	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	170	65	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	72	42	7	10	7	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	85	50	7	10	7	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	111	66	5	8	5	8	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	145	87	5	8	5	8	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	170	105	5	8	5	8	3/8" g.f. BSPP	DN 15	1/2"
<b>60 Hz</b>									
XRN2.30	33	2,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	43	3	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	51	3,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	67	4,5	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	87	6	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	103	7	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN2.30	133	10	20	20	10	10	1/4" g.f. BSPP	DN 15	1/2"
XRN6.30	51	10	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	67	14	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	87	20	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	103	24	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.30	133	30	16	20	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	67	24	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	87	33	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	103	40	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	133	50	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.38	174	68	10	15	10	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	67	38	7	10	7	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	87	50	7	10	7	10	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	103	62	5	8	5	8	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	133	80	5	8	5	8	3/8" g.f. BSPP	DN 15	1/2"
XRN6.48	174	105	5	8	5	8	3/8" g.f. BSPP	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
    - λ - 400 V - 50 Hz
    - Δ - 220÷290 V - 60 Hz
    - λ - 380÷500 V - 60 Hz
  - Singlephase 63 - 0.09 kW - 4 Poles - IP55 - I.CL.F - S1 - 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.
- Weight:** ● 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

**KEY TO SYMBOLS**

PUMP TYPE  
 PLUNGER STROKE: 2 - 6  
 Ø PLUNGER: 30 - 38 - 48

**XRN 2.30 P 85 F Z MU G**

- 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 UNIFED MOTOR
- Z 4÷20 mA ELECTRIC ACTUATOR
- W 3÷15 BAR PNEUMATIC ACTUATOR
- F UNI-ON FLANGED CONNECTIONS
- FA ANSI FLANGED CONNECTIONS
- N° STROKES/m: 28 - 36 - 55 - 72 - 85 - 111 - 145 - 170

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.

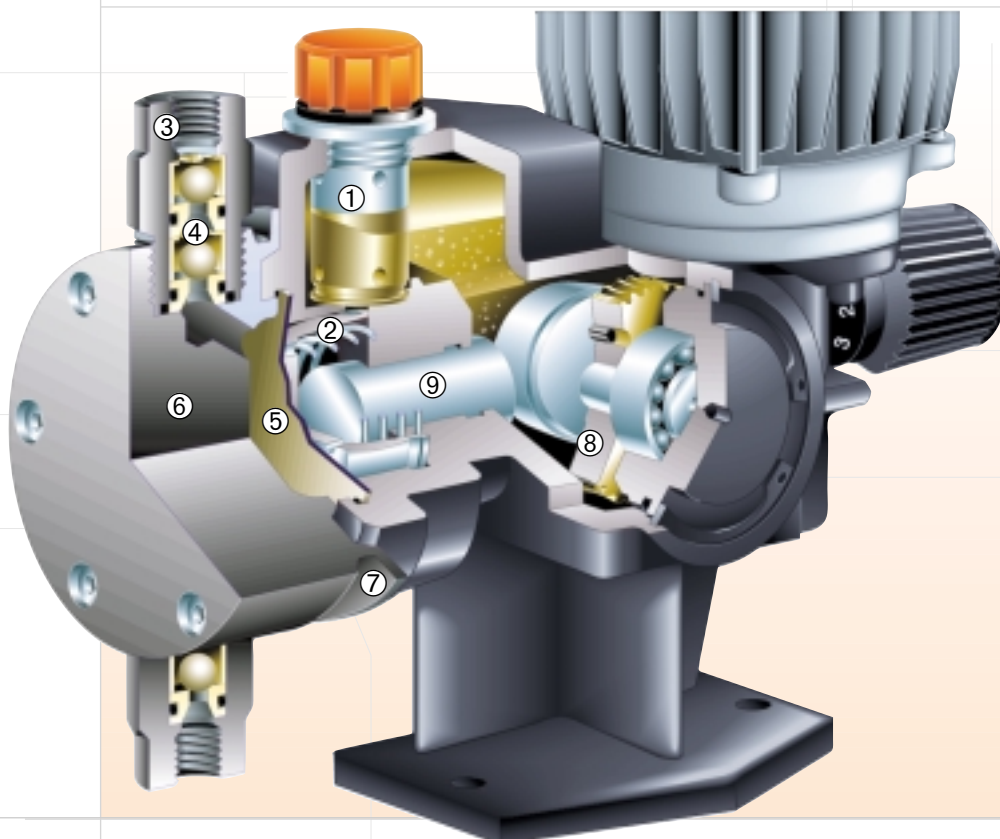
The totally enclosed monobloc construction with no external moving parts and the built-in relief valve ensure full compliance with EC machine safety standard.

## CONSTRUCTION CHARACTERISTICS

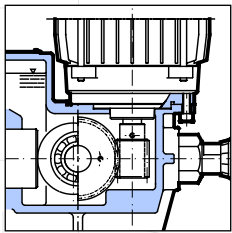
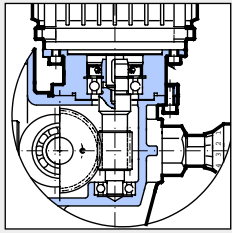
- 1 **BUILT-IN RELIEF VALVE**  
Eliminates the cost, installation and maintenance of an external relief valve.
- 2 **HYDRAULIC SYSTEM**  
In the mechanically actuated oil replenishing system the restored volume is determined by the diaphragm position at the limit of the suction stroke, which therefore 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.



## MOTORS

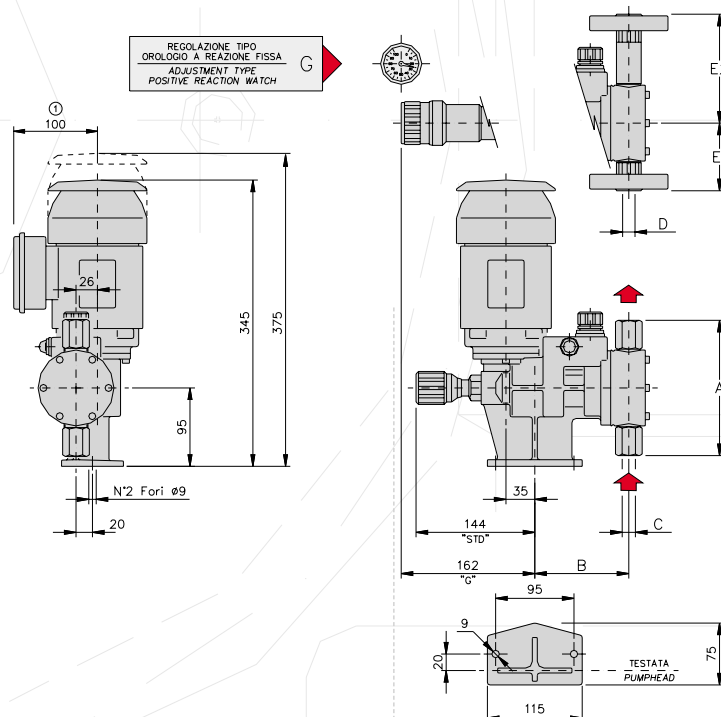
VERSIONS	TYPE	CODE	PHASES	SIZE	FORMA	CHARACTERISTICS
Motor "BASIC" version 	STD MOTORI (SPECIAL GAMAR)	/	THREE-PH	63	*	TEFC 0,18 kW 4 POLES 230/400 V 50/60 Hz IEC 34-1
		M1	SINGLE-PH	63	*	TEFC 0,09 kW 2 POLES 230 V 50 Hz IEC 34-1
Motor "UNEL-MEC" version 	STD MOTORS	MU	THREE-PH	63	B14	TEFC 0,18 kW 4 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 an 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	
	A	B	C g.f.	E1	E2	A	B	C g.f.	E1	E2	A	B	C g.f.	E1	E2	UNI	ANSI
XRNG. 30	164	108	1/4" g.f. BSPF	82	132	171	121	1/4" g.f. BSPF	85,5	135,5	-	-	-	-	-	ANSI D15.1-1982	1/2" - 150 RF
XRNG. 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	PVC D15.1-1982	1/2" - 150 RF
XRNG. 3B	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	UNI 2222/89	1/2" - 150 RF
XRNG. 4B	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	ANSI B16.5	1/2" - 150 RF



## 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

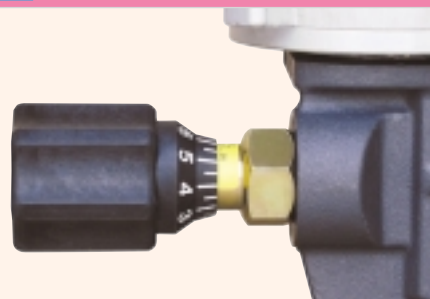


## ADJUSTMENT SYSTEMS

- **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.