

# CR VERTICAL MULTISTAGE WASHDOWN PUMPS

For agricultural, industrial plant and  
commercial vehicle washdown



**GRUNDFOS**





# GRUNDFOS MAKE LIGHT WORK OF HEAVY CLEANING JOBS.

- \* LOW CAPITAL OUTLAY
- \* ROBUST CONSTRUCTION FOR LONG LIFE
- \* NO REGULAR MAINTENANCE
- \* FULLY ADJUSTABLE GUN, FINE SPRAY TO POWER JET
- \* EASILY INSTALLED
- \* WATER TEMPERATURES UP TO 40°C
- \* WIDE DUTY RANGE FOR DIFFERENT APPLICATIONS

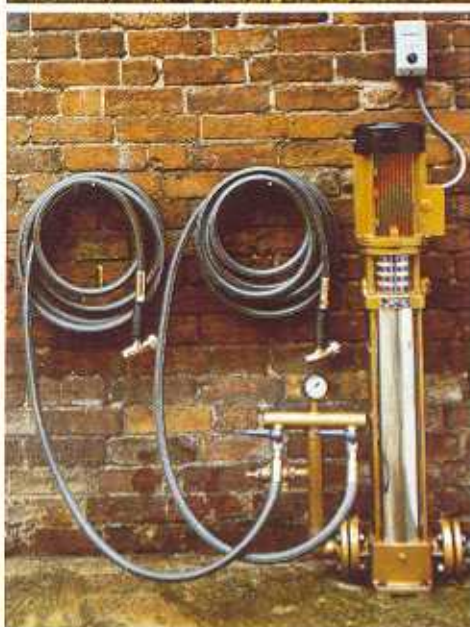
The secret of effective washdown using water, is to provide the correct combination of flow and pressure.

A popular misconception is that pressure alone will provide the correct cleaning action, but our experience has shown that excessive pressure can lead to damage to the surface being cleaned as well as being hazardous. The GRUNDFOS system however, provides an ideal combination of flow and pressure for fast and efficient cleaning.

GRUNDFOS washdown pumps can be found at work, quietly and reliably in farmyards, cow parlours, dairies, abattoirs, ready-mixed concrete depots, food processing factories, quarries and in many other places where cost-effective washdown is needed.

The heart of the system is the GRUNDFOS multi-stage centrifugal pump – world renowned for high quality and long life. Many years of continuous operation without routine maintenance is not unusual for our pumps.

The reason for this longevity is simple. High volume production has enabled us to use the very best material for pump components – like corrosion resistant stainless-





steel and hard wearing ceramics or tungsten carbide, without a compromise on cost. In short – top quality but at very competitive prices.

#### Which washdown system do you need?

**Ring Main Washdown System:** This system is recommended where washdown is carried out some distance from the pump, thus eliminating unnecessarily long hose runs and consequent pressure loss.

Take off points can be sited at the required locations and with quick release couplings provide fast and easy hook-up to the system.

GRUNDFOS equipment comprises pump, starter, pressure gauge, spring loaded safety valve and hose assembly complete with couplings and gun. Optional equipment includes quick release couplings, lever arm ball valves, pump counter flanges and alternative gun nozzles. In addition a spring loaded footvalve can be supplied, where storage water level is below the pump suction inlet.

**Pump and Manifold Washdown Sets:** These sets comprise pump, starter, manifold assembly and hose assembly complete with couplings and gun. The hose and gun assembly is connected directly to the pump via a purpose built manifold. Included in the manifold assembly is a spring loaded safety valve, pressure gauge, lever arm ball valve(s) and pump discharge flange. Optional equipment includes quick release couplings, footvalve, gun nozzles and pump suction counter flange.

#### Storage Tank Sizing

To ensure an adequate supply of water to the pump, a water storage tank is required, the size of which can be determined as follows:

$$C = [W - F] \times T$$

Where:

- C = Storage Tank Capacity
- W = Estimated Water Usage
- F = Flow rate to tank
- T = Estimated washing time

Example:

Water usage for pump model CR4/160 with 4mm nozzle one gun, from selection table:  
(0.58 litres/sec × 60)

**35 litres/min**


Flow rate into storage tank (for example): **15 litres/min**

Estimated washing time:

**20 minutes**

$$\text{Tank capacity in litres} = [35 - 15] \times 20 \\ = 400 \text{ litres}$$

A safety margin of approx 25% will give a required tank capacity of **500 litres.**

Duty	Typical Application	Pump Type	Motor Power kW	Manifold Gun(s)	Pressure/Total Flow (with all guns operating) with Nozzle Size							
					3 · 5mm		4 · 0mm		4 · 5mm		5 · 0mm	
					Bars PSI	L/Sec GPM	Bars PSI	L/Sec GPM	Bars PSI	L/Sec GPM	Bars PSI	L/Sec GPM
LIGHT	MILKING PARLOURS CAR AND LIGHT COMMERCIAL VEHICLE WASHING FOOD PROCESSING MACHINERY/EQUIPMENT CLEANING ETC.	CR2-150	1 · 5(1ph.)		12 · 7 185	0 · 40 5 · 3	11 · 7 170	0 · 50 6 · 6	11 · 0 160	0 · 58 7 · 7	10 · 7 155	0 · 63 8 · 5
		CR2-150	1 · 5(3ph.)		12 · 7 185	0 · 40 5 · 3	11 · 7 170	0 · 50 6 · 6	11 · 0 160	0 · 58 7 · 7	10 · 7 155	0 · 63 8 · 5
		CR4-120	2 · 2(1ph.)		11 · 4 165	0 · 40 5 · 3	11 · 0 160	0 · 50 6 · 6	10 · 9 158	0 · 60 7 · 9	10 · 7 155	0 · 63 8 · 5
		CR4-120	2 · 2(3ph.)		11 · 4 165	0 · 40 5 · 3	11 · 0 160	0 · 50 6 · 6	10 · 9 158	0 · 60 7 · 9	10 · 7 155	0 · 63 8 · 5
MEDIUM	COMMERCIAL VEHICLE WASHING DAIRIES FARM IMPLEMENT CLEANING FISH DOCKS ETC.	CR2-220	2 · 2(1ph.)		17 · 5 255	0 · 48 6 · 4	16 · 2 235	0 · 58 7 · 7	14 · 8 215	0 · 66 9 · 0	13 · 8 200	0 · 71 9 · 5
		CR2-220	2 · 2(3ph.)		17 · 5 255	0 · 48 6 · 4	16 · 2 235	0 · 58 7 · 7	14 · 8 215	0 · 66 9 · 0	13 · 8 200	0 · 71 9 · 5
		CR4-160	3 · 0(3ph.)		15 · 2 220	0 · 43 5 · 7	14 · 8 215	0 · 58 7 · 7	14 · 5 210	0 · 68 9 · 0	14 · 1 205	0 · 73 9 · 7
		CR4-160	3 · 0(3ph.)		13 · 8 200	0 · 87 11 · 4	12 · 9 187	1 · 07 14 · 1	12 · 1 175	1 · 27 16 · 7	11 · 7 170	1 · 35 17 · 8
		CR4-190	4 · 0(3ph.)		18 · 3 265	0 · 50 6 · 6	17 · 4 260	0 · 62 8 · 1	17 · 0 247	0 · 75 9 · 9	16 · 9 245	0 · 80 10 · 6
		CR4-190	4 · 0(3ph.)		16 · 2 235	0 · 95 12 · 5	14 · 5 210	1 · 15 15 · 2	13 · 1 190	1 · 37 18 · 0	12 · 1 175	1 · 45 19 · 1
HEAVY	EARTH MOVING PLANT WASHING PRE-MIX CONCRETE DEPOTS SLAUGHTERHOUSE ETC.	CR2-260	3 · 0(3ph.)		20 · 0 290	0 · 50 6 · 6	19 · 0 275	0 · 62 8 · 1	17 · 2 250	0 · 71 9 · 5	16 · 5 240	0 · 76 10 · 0
		CR4-220	4 · 0(3ph.)		20 · 7 300	0 · 53 7 · 0	20 · 0 290	0 · 67 8 · 8	19 · 3 280	0 · 77 10 · 1	19 · 0 275	0 · 83 11 · 0
		CR4-220	4 · 0(3ph.)		18 · 3 265	1 · 02 13 · 4	17 · 0 247	1 · 20 15 · 8	15 · 7 227	1 · 40 18 · 5	14 · 9 216	1 · 50 19 · 8
		CR8-160	5 · 5(3ph.)		16 · 2 235	1 · 58 20 · 9	15 · 2 220	2 · 20 29 · 0	13 · 8 200	2 · 53 33 · 4	13 · 1 190	2 · 70 35 · 6
		CR8-200	7 · 5(3ph.)		19 · 3 280	1 · 67 22 · 0	18 · 3 265	2 · 40 31 · 7	15 · 9 230	2 · 73 36 · 1	15 · 2 220	3 · 00 39 · 6



# TECHNICAL DATA

**PUMP:** Vertical centrifugal multi-stage design for smooth quiet operation, high efficiency, with water lubricated bearings, eliminating routine maintenance.

**MANIFOLD:** One, two or four gun (see table.) Fabricated from wrought iron tube and incorporating lever arm ball valve(s) pressure gauge, and spring-loaded safety valve. All models incorporate pump discharge counter flange.

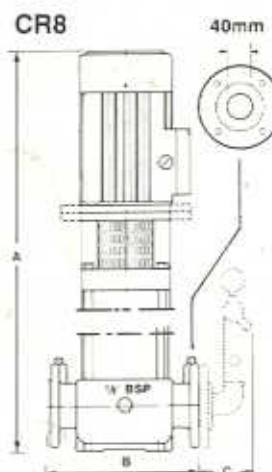
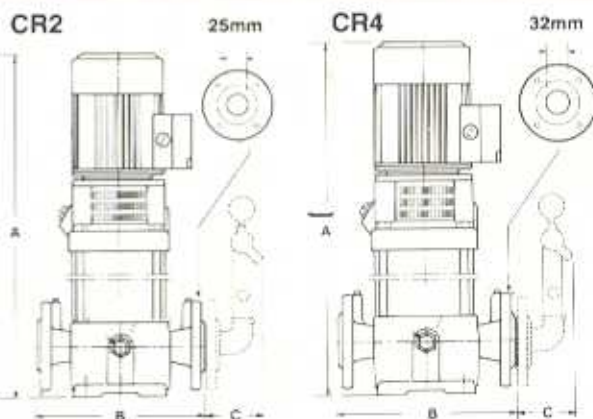
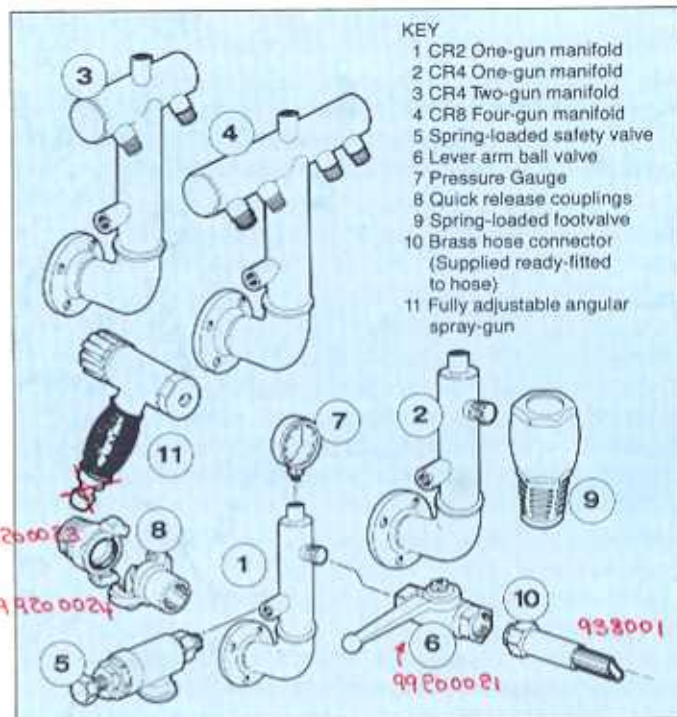
**QUICK RELEASE COUPLINGS:** These are half-turn couplings available as an optional extra on ring main and manifold systems. Manufactured in brass, with rubber 'O' rings, each coupling half is available 1/2" BSPM or 1/2" BSPF. One pair of each is required on manifold systems for each hose outlet. On ring main systems whilst a 1/2" BSPM half coupling is required for each take-off point, a 1/2" BSPF half coupling is required for each hose assembly.

**HOSE ASSEMBLY:** 6 metre length of high pressure 27.5 bars (400 psi) 1/2" hose complete with two fitted brass hose couplings and fully adjustable angular spray gun. Alternative nozzle sizes are available (see table). Additional hose is available if required, but it is advisable to keep hose runs as short as possible to reduce pressure and friction losses to a minimum.

**STARTER:** Compact moulded-case unit with stop/start push buttons incorporating no voltage release overload protection and phase failure protection (single phase prevention) on three phase models. When ordering please state pump model and voltage.

## ANCILLARY ITEMS:

- Spring loaded footvalves: CR2 1", CR4 1 1/4", and CR8 1 1/2"
- CR2 Pump counter flange 1", CR4 1 1/4", CR8 1 1/2", complete with gaskets, nuts & bolts. Two required for ring main system, one required for washdown set.
- Pressure gauge screwed 1/4" BSPM 0-225 psig (15.4 bars) Pressure gauge screwed 1/4" BSPM 0-400 psig (27.5 bars)
- Bronze spring loaded safety valve: inlet 1/2" BSPM, outlet 1/2" BSPF  
Pressure ranges available: 125-175 psi ( 8.6-12.2 bars)  
175-250 psi (12.2-17.2 bars)  
200-300 psi (13.8-20.7 bars)
- Lever arm ball valve quarter turn on/off 1/2" BSPF

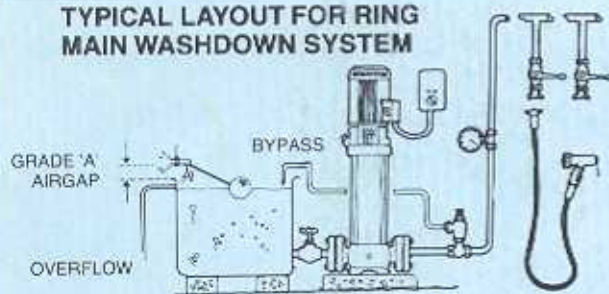


## DIMENSIONS

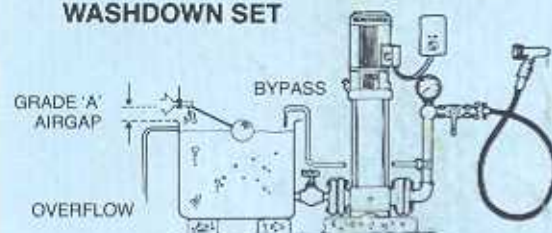
Pump Type	A mm	B mm	C mm
CR2-150	771	250	105
CR2-220	911	250	105
CR2-260	1009	250	105
CR4-120	839	250	105
CR4-160	973	250	105
CR4-190	1054	250	105
CR4-220	1135	250	105
CR8-160	1176	280	120
CR8-200	1296	280	120

Recommended minimum/inlet pipe sizes:  
CR2-1" CR4-1 1/4" CR8-1 1/2"

## TYPICAL LAYOUT FOR RING MAIN WASHDOWN SYSTEM



## TYPICAL LAYOUT FOR GRUNDFOS WASHDOWN SET



The above diagrams are typical installations and local water supply byelaws should be consulted prior to tank installation.

## GRUNDFOS PUMPS LTD

**HEAD OFFICE, SALES & SERVICE:** Grovebury Road, Leighton Buzzard, Bedfordshire LU7 8TL. Telephone (0525) 850000. Telex 825544. Facsimile (0525) 850011.

**NORTHERN AREA SALES & SERVICE:** Gawsworth Court, Risley Road, Risley, Warrington, Cheshire WA3 6NJ. Telephone (0925) 813300. Facsimile (0925) 830014.

It is the continuing policy of Grundfos to develop and improve our products, and we reserve the right to amend prices and specification without prior notice.

Ref WD 3/92

# GRUNDFOS

