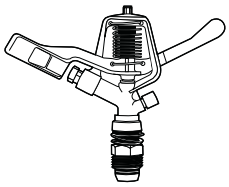
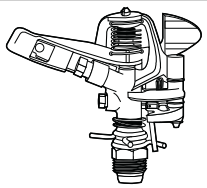
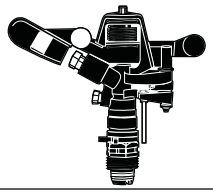
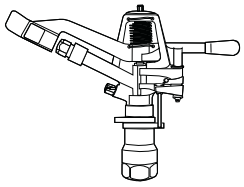
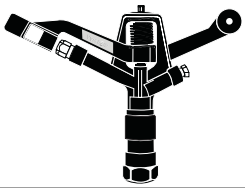
VYRSA SPRINKLERS (CONTINUED)

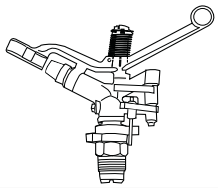
VYRSA 70	Full circle brass sprinkler
	
Casting range	31.2–34.4m diameter
Water consumption	1.23–5.23m³/h
Operating pressure	4.2–4.9 bar
Trajectory angle	26° (22° spreader nozzle)
Nozzle range	5/32" – 9/32" (4.0–7.0mm)
Connection	3/4" male thread
Features	Single nozzle and plug, or twin nozzles
Application	Agricultural, recommended spacing 18–24m

VYRSA 6001 (60)	Full and part circle brass sprinkler
	
Casting range	26.2–36.2m diameter
Water consumption	1.02–3.27m³/h
Operating pressure	2.8–4.2 bar
Trajectory angle	24° (12° spreader nozzle)
Nozzle range	5/32" – 7/32" (4.0–5.6mm)
Connection	3/4" male thread
Features	Single nozzle and plug, or twin nozzles
Application	Agricultural, recommended spacing 12–18m

VYRSA 6610 (66)	Full and part circle nylon sprinkler
	
Casting range	26.2–30.5m diameter
Water consumption	1.01–2.90m³/h
Operating pressure	2.8–4.2 bar
Trajectory angle	30° (11° spreader nozzle)
Nozzle range	5/32" – 7/32" (4.0–5.6mm)
Connection	3/4" male thread
Features	Single nozzle and plug, or twin nozzles
Application	Agricultural, recommended spacing 12–18m

VYRSA 65	Full and part circle brass sprinkler
	
Casting range	34.8–46.3m diameter
Water consumption	2.47–7.83m³/h
Operating pressure	4.2–5.6 bar
Trajectory angle	28° (14° spreader nozzle)
Nozzle range	7/32" – 3/8" (5.6–9.6mm)
Connection	1" female thread
Features	Single nozzle and plug, or twin nozzles
Application	Agricultural, recommended spacing up to 48m

VYRSA 86	Full circle nylon sprinkler
	
Casting range	38.0–55.2m diameter
Water consumption	2.24–9.40m³/h
Operating pressure	3.5–5.6 bar
Trajectory angle	26° & (26° spreader nozzle)
Nozzle range	7/32" – 3/8" (5.6–9.6mm)
Connection	1" female thread
Features	Single nozzle and plug, or twin nozzles
Application	Agricultural, recommended spacing up to 30m

VYRSA 150	Full and part circle brass sprinkler
	
Casting range	52–74m diameter
Water consumption	7–28m³/h
Operating pressure	5–7 bar
Trajectory angle	27° & (4° spreader nozzle)
Nozzle range	9x32mm – 16x6.3mm
Connection	1 1/4" male thread
Features	Twin nozzles
Application	Agricultural & industrial

VYRSA 155	Full circle brass sprinkler
	
Casting range	51–69m diameter
Water consumption	8.5–22.3m³/h
Operating pressure	4–7 bar
Trajectory angle	28° & (28° & 13° spreader nozzle)
Nozzle range	8x6.3x3.2mm – 14.5x6.3x3.2mm
Connection	1 1/4" male thread
Features	Long range, three nozzles
Application	Agricultural & industrial

Sprinkler nozzle size conversion table

Inch	mm	Inch	mm	Inch	mm
1/16"	1.6	3/16"	4.8	3/8"	9.6
5/64"	2.0	13/64"	5.2	7/16"	11.0
3/32"	2.5	7/32"	5.6	15/32"	12.0
7/64"	2.8	15/64"	6.0		
1/8"	3.2	1/4"	6.4		
9/64"	3.5	9/32"	7.0		
5/32"	4.0	19/64"	7.6		
11/64"	4.4	5/16"	8.0		

NOTE:
Every 1/64 inch
= 0.4mm
(by nearest 0.01)

VYRSA 26 & 35 SPRINKLERS: PERFORMANCE CHARACTERISTICS

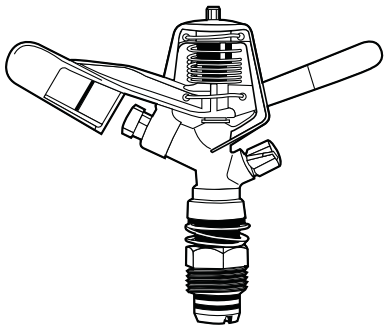
Pressure	Nozzle size							
	2.5mm Blue		2.8mm Orange		3.0mm Green		3.2mm Black	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.0	350	20.5	450	21.0	510	22.0	570	22.0
2.5	390	21.0	500	22.0	550	23.0	610	23.0
3.0	430	21.5	550	22.5	630	23.0	700	23.0
3.5	460	21.5	590	22.5	680	23.5	750	23.5
4.0	490	21.5	630	23.0	720	24.0	810	24.0

Pressure	Nozzle size							
	2.5 x 2.5mm		2.8 x 2.5mm		3.0 x 2.5mm		3.2 x 2.5mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.0	630	20.5	730	22.0	790	22.0	850	22.0
2.5	710	21.0	820	22.0	870	22.5	930	22.5
3.0	780	21.5	900	22.5	980	23.0	1050	23.0
3.5	840	22.0	970	22.5	1060	23.5	1130	23.5
4.0	890	22.0	1030	23.0	1120	24.0	1210	24.0

Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

VYRSA 26 NYLON SPRINKLER

- Full circle
- 15mm - 1/2" male BSP
- Spacing 12 x 12m or 12 x 15m



VYRSA 35 BRASS SPRINKLER

- Full circle
- 20mm - 3/4" male BSP
- Popular spacing 12 x 18m

Coefficient of uniformity (Cu)

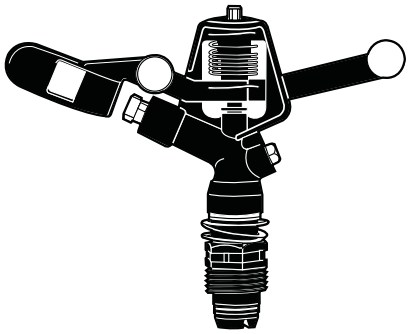
- 86% on 12 x 18m – 11/64" x 3/32" @ 3bar
- 87% on 18 x 18m – 11/64" x 3/32" @ 3bar
- 92% on 12 x 18m – 7/32" x 1/8" @ 3bar
- 90% on 18 x 18m – 7/32" x 1/8" @ 3bar

Pressure	Nozzle size											
	9/64" 3.6mm		5/32" 4.0mm		11/64" 4.4mm		3/16" 4.8mm		13/64" 5.2mm		7/32" 5.6mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
1.75	660	26.2	800	27.8	960	29.4	1140	30.0	1340	30.8	1550	31.2
2.10	720	27.0	870	28.8	1050	30.0	1250	30.6	1480	31.4	1720	32.0
2.46	770	27.6	940	29.4	1140	30.6	1360	31.2	1610	32.0	1880	33.0
3.16	870	28.4	1070	30.2	1290	31.4	1550	32.4	1830	33.2	2140	34.8
3.51	920	28.8	1130	30.6	1360	31.8	1630	32.6	1930	33.8	2240	35.6
4.21	990	29.4	1230	31.2	1490	32.4	1780	33.2	2090	34.8	2410	36.8

Pressure	Nozzle size											
	9/64" x 3.32" 3.6 x 2.4mm		5/32" x 3/32" 4.0 x 2.4mm		11/64" x 3/32" 4.4 x 2.4mm		3/16" x 1/8" 4.8 x 3.2mm		13/64" x 1/8" 5.2 x 3.2mm		7/32" x 1/8" 5.6 x 3.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
1.75	920	26.0	1100	27.6	1250	29.0	1680	29.4	1880	30.2	2100	30.6
2.10	1000	26.6	1200	28.4	1380	29.6	1850	30.0	2080	30.8	2320	31.4
2.46	1090	27.2	1300	29.0	1490	30.2	2000	30.6	2260	31.4	2520	32.4
3.16	1250	28.2	1470	30.0	1690	31.2	2290	31.8	2570	32.6	2880	34.2
3.51	1330	28.4	1550	30.2	1790	31.4	2410	32.0	2700	33.2	3020	35.0
4.21	1440	29.0	1700	30.8	1950	32.0	2630	32.6	2950	34.2	3270	36.2

Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

VYRSA 36 & 56 SPRINKLERS: PERFORMANCE CHARACTERISTICS



VYRSA 36 NYLON SPRINKLER

- Full circle
- 20mm - 3/4" male BSP
- Popular spacing 12 x 18m

Coefficient of uniformity (Cu)

- 84% on 12 x 18m – 5/32 x 3/32 @ 3bar
- 85% on 18 x 18m – 5/32 x 3/32 @ 3bar
- 90% on 12 x 18m – 3/16 x 1/8 @ 3bar
- 89% on 18 x 18m – 3/16 x 1/8 @ 3bar

Pressure	Nozzle size											
	9/64" 3.6mm		5/32" 4.0mm		11/64" 4.4mm		3/16" 4.8mm		13/64" 5.2mm		7/32" 5.6mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
1.75	660	26.2	800	27.8	960	29.4	1140	30.0	1340	30.8	1550	31.2
2.10	720	27.0	870	28.8	1050	30.0	1250	30.6	1480	31.4	1720	32.0
2.46	770	27.6	940	29.4	1140	30.6	1360	31.2	1610	32.0	1880	33.0
3.16	870	28.4	1070	30.2	1290	31.4	1550	32.4	1830	33.2	2140	34.8
3.51	920	28.8	1130	30.6	1360	31.8	1630	32.6	1930	33.8	2240	35.6
4.21	990	29.4	1230	31.2	1490	32.4	1780	33.2	2090	34.8	2410	36.8

Pressure	Nozzle size											
	9/64" x 3/32" 3.6 x 2.4mm		5/32" x 3/32" 4.0 x 2.4mm		11/64" x 3/32" 4.4 x 2.4mm		3/16" x 1/8" 4.8 x 3.2mm		13/64" x 1/8" 5.2 x 3.2mm		7/32" x 1/8" 5.6 x 3.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
1.75	920	26.0	1100	27.6	1250	29.0	1680	29.4	1880	30.2	2100	30.6
2.10	1000	26.6	1200	28.4	1380	29.6	1850	30.0	2080	30.8	2320	31.4
2.46	1090	27.2	1300	29.0	1490	30.2	2000	30.6	2260	31.4	2520	32.4
3.16	1250	28.2	1470	30.0	1690	31.2	2290	31.8	2570	32.6	2880	34.2
3.51	1330	28.4	1550	30.2	1790	31.4	2410	32.0	2700	33.2	3020	35.0
4.21	1440	29.0	1700	30.8	1950	32.0	2630	32.6	2950	34.2	3270	36.2

Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

VYRSA 56 NYLON SPRINKLER

- Full circle
- 20mm - 3/4" male BSP
- Popular spacing 18 x 18m

Coefficient of uniformity (Cu)

- 84% on 18 x 18m – 3/16 x 1/8 @ 3.5bar
- 85% on 18 x 24m – 13/64 x plug @ 4bar
- 86% on 30 x 27m△ – 3/16 x plug @ 3bar

Pressure	Nozzle size											
	1/8" 3.2mm		9/64" 3.6mm		5/32" 4.0mm		11/64" 4.4mm		3/16" 4.8mm		13/64" 5.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.5	620	26.8	790	28.4	970	30.2	1160	31.0	1390	31.8	1640	32.6
3.0	680	27.4	860	28.8	1050	30.6	1270	31.8	1510	32.8	1790	33.8
3.5	740	27.8	930	29.4	1140	31.2	1380	32.4	1640	33.6	1930	34.8
4.0	790	28.2	1000	29.8	1120	31.6	1470	32.8	1750	34.0	2060	35.6
4.5	840	28.6	1060	30.2	1290	32.0	1550	33.2	1860	34.4	2180	36.0
5.0	880	29.2	1120	30.6	1360	32.4	1640	33.6	1960	35.0	2290	36.4
5.5	930	29.6	1170	31.0	1430	33.0	1720	34.2	2060	35.4	2380	36.8

Pressure	Nozzle size											
	1/8" x 3/82" 3.2 x 2.4mm		9/64" x 3/32" 3.6 x 2.4mm		5/32" x 3/32" 4.0 x 2.4mm		11/64" x 3/32" 4.4 x 2.4mm		3/16" x 1/8" 4.8 x 3.2mm		13/64" x 1/8" 5.2 x 3.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.5	980	26.5	1150	28.2	1320	30.0	1520	30.6	2050	31.6	2310	32.4
3.0	1070	27.0	1250	28.6	1450	30.4	1670	31.6	2240	32.4	2520	33.4
3.5	1160	27.4	1350	29.0	1560	30.8	1800	32.0	2420	33.0	2720	34.2
4.0	1240	28.0	1450	29.4	1670	31.2	1920	32.4	2590	33.4	2910	35.0
4.5	1320	28.4	1540	29.8	1770	31.8	2030	33.0	2750	33.8	3070	35.4
5.0	1360	28.8	1620	30.4	1870	32.2	2140	33.4	2880	34.2	3230	35.8
5.5	1460	29.2	1700	30.8	1960	32.6	2240	33.8	3010	34.8	3360	36.2

Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

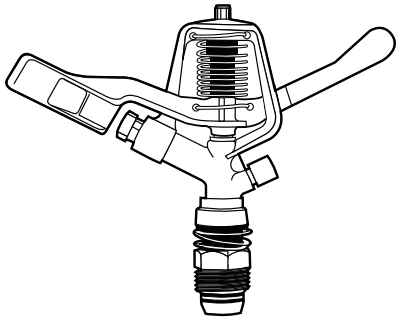
VYRSA 70 & 86 SPRINKLERS: PERFORMANCE CHARACTERISTICS

VYRSA 70 BRASS SPRINKLER

- Full circle
- 20mm - 3/4" male BSP
- Popular spacing 18 x 18m

Coefficient of uniformity (Cu)

- 84% on 18 x 18m – 11/64 x 3/32 @ 3.5bar
- 90% on 18 x 18m – 9/64 x plug @ 4bar



Pressure	Nozzle size													
	5/32" 4.0mm		11/64" 4.4mm		3/16" 4.8mm		13/64" 5.2mm		7/32" 5.6mm		1/4" 6.4mm		9/32" 7.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.45	940	29.0	1140	30.0	1360	30.2	1610	32.0	1880	32.4	2041	34.2	3000	36.0
3.15	1070	30.2	1290	31.4	1550	32.4	1830	33.2	2140	34.8	2750	36.8	3450	37.4
3.50	1130	30.6	1360	31.8	1630	32.6	1930	33.8	2240	35.6	2910	37.8	3630	38.6
4.20	1230	31.2	1490	32.4	1780	33.2	2090	34.8	2410	36.8	3160	39.0	3970	41.4
4.90	1350	31.8	1610	33.0	1920	33.8	2220	35.4	2560	37.5	3420	40.2	4170	43.4

Pressure	Nozzle size													
	5/32" x 3/32" 4.0 x 2.4mm		11/64" x 3/32" 4.4 x 2.4mm		3/16" x 1/8" 4.8 x 3/2mm		13/64" x 1/8" 5.2 x 3.2mm		7/32" x 1/8" 5.6 x 3.2mm		1/4" x 1/8" 6.4 x 3.2mm		9/32" x 1/8" 7.2 x 3.2mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.45	1290	29.0	1490	29.6	2000	31.0	2250	31.4	2510	32.4	3040	33.8	3670	34.4
3.15	1470	30.0	1690	31.2	2290	31.8	2560	32.6	2880	34.2	3490	36.2	4190	36.8
3.50	1550	30.2	1780	31.4	2400	32.2	2700	33.2	3010	35.0	3670	37.2	4420	38.2
4.20	1690	30.8	1940	32.2	2630	32.6	2950	34.1	3260	36.2	4010	38.4	4430	40.8
4.90	1830	31.4	2090	32.6	2810	33.2	3170	34.8	3490	36.8	4330	39.6	5230	42.8

Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

VYRSA 86 NYLON SPRINKLER

- Full circle
- 20mm - 1" female BSP
- Spacing up to 30m

Coefficient of uniformity (Cu)

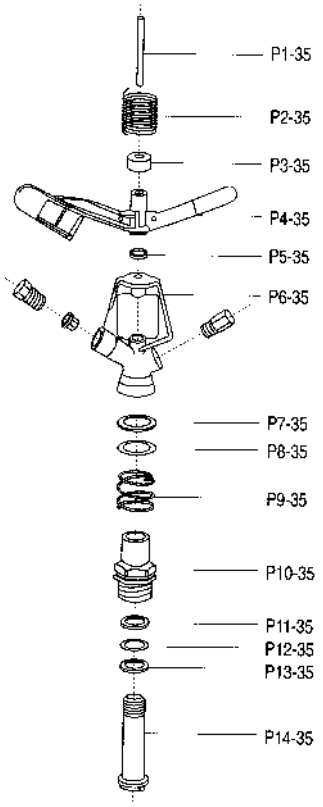
- 86% on 24 x 18m – 7/32 x 11/64 @ 3bar
- 85% on 30 x 24m△ – 7/32 x 11/64 @ 3bar
- 88% on 30 x 27m△ – 7/32 x 11/64 @ 3bar

Pressure	Nozzle size											
	7/32" 5.5mm		1/4" 6.35mm		9/32" 7.14mm		5/16" 7.93mm		11/32" 8.73mm		3/8" 9.52mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.80	1998	36.8	2611	39.0	3314	39.6	4018	40.2	4790	41.4	5540	44.2
3.15	2134	37.4	2769	39.8	3518	40.8	4290	41.4	5110	43.2	5902	46.0
3.50	2240	38.0	2920	40.8	3700	42.0	4540	42.7	5400	45.0	6240	47.8
4.20	2470	39.2	3220	42.2	4080	43.8	4994	45.1	5940	47.4	6940	50.3
4.55	2588	39.8	3360	43.2	4268	44.8	5221	43.3	6220	48.8	7265	50.9
5.60	2860	42.6	3740	46.0	4740	47.4	5834	49.1	6940	52.4	8100	55.2

Pressure	Nozzle size											
	7/32" x 11/64" 5.55 x 4.36mm		1/4" x 11/64" 6.35 x 4.36mm		1/4" x 3/16" 6.35 x 4.76mm		9/32" x 3/16" 7.14 x 4.76mm		9/32" x 7/32" 7.14 x 5.55mm		11/32" x 7/32" 8.7 x 5.55mm	
Bar	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m	ℓ/h	ø m
2.80	3200	36.8	3780	39.0	4030	39.0	4610	39.6	5150	39.6	6520	41.4
3.15	3460	37.4	4030	39.8	4280	39.8	4900	40.8	5440	40.8	6980	43.2
3.50	3540	38.0	4280	40.8	4540	40.8	5180	42.0	5760	42.0	7340	45.0
4.20	3960	39.2	4680	42.2	5000	42.2	5720	43.8	6370	43.8	8100	47.4
4.55	4140	39.8	4930	43.2	5180	43.2	5980	44.8	6620	44.8	8420	48.8
5.60	4610	42.6	5440	46.0	5800	46.0	6620	47.4	7420	47.4	9400	52.4

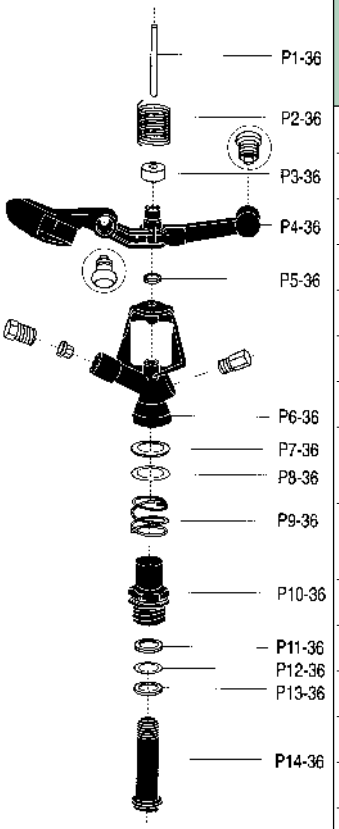
Water consumption: ℓ/h Wetted diameter: øm 1m³/h = 1 000ℓ/h

VYRSA SPRINKLER SPARE PARTS



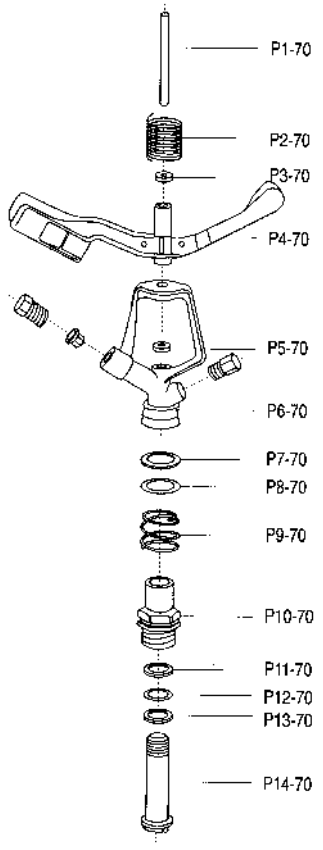
VYRSA 35
FULL CIRCLE (BRASS)
20mm

No	Description
P1-35	Arm Pin
P2-35	Arm Spring
P3-35	Spring Cap
P4-35	Arm
P5-35	Arm Washer
P6-35	Body
P7-35	Neck Teflon Washer
P8-35	Neck S/S Washer
P9-35	Neck Spring
P10-35	Hex Sleeve
P11-35	Top Washer
P12-35	Centre Washer
P13-35	Bottom Washer
P14-35	Bearing Nipple



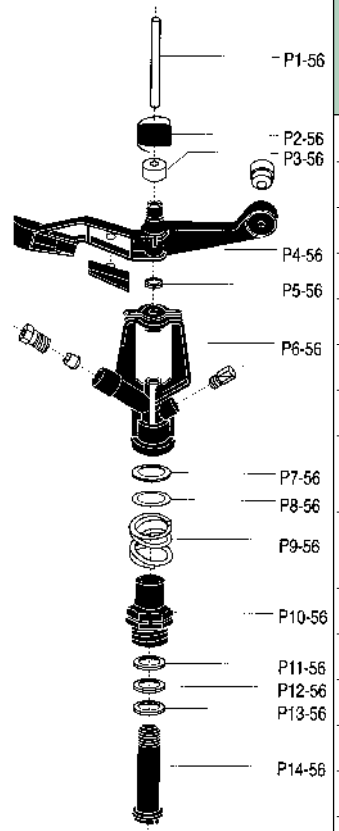
VYRSA 36
FULL CIRCLE (NYLON)
20mm

No	Description
P1-36	Arm Pin
P2-36	Arm Spring
P3-36	Spring Cap
P4-36	Arm
P5-36	Arm Washer
P6-36	Body
P7-36	Neck Teflon Washer
P8-36	Neck S/S Washer
P9-36	Neck Spring
P10-36	Hex Sleeve
P11-36	Top Washer
P12-36	Centre Washer
P13-36	Bottom Washer
P14-36	Bearing Nipple



VYRSA 70
FULL CIRCLE (BRASS)
20mm

No	Description
P1-70	Arm Pin
P2-70	Arm Spring
P3-70	Spring Cap
P4-70	Arm
P5-70	Arm Washer
P6-70	Body
P7-70	Neck Teflon Washer
P8-70	Neck S/S Washer
P9-70	Neck Spring
P10-70	Hex Sleeve
P11-70	Top Washer
P12-70	Centre Washer
P13-70	Bottom Washer
P14-70	Bearing Nipple



VYRSA 56
FULL CIRCLE (NYLON)
20mm

No	Description
P1-56	Arm Pin
P2-56	Arm Spring
P3-56	Spring Cap
P4-56	Arm
P5-56	Arm Washer
P6-56	Body
P7-56	Neck Teflon Washer
P8-56	Neck S/S Washer
P9-56	Neck Spring
P10-56	Hex Sleeve
P11-56	Top Washer
P12-56	Centre Washer
P13-56	Bottom Washer
P14-56	Bearing Nipple

Spares on Vyrsa 86 & 55 similar to the above. Please see spares list.

Friction loss expressed as percentage of pipe length

Pipe size (mm)	Flow in m³ per hour																							
	3	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**
40	2.2	3.3	5.4	7.8	10.0	13.5																		
50	0.6	1.0	1.6	2.2	3.0	3.8	4.7	5.7	6.8	8.0	9.3	11	12											
70					0.6	0.7	1.0	1.2	1.4	1.6	1.9	2.2	2.4	2.7	3.0	3.4	3.8	4.2	4.5	5.0	5.4	5.8	6.2	6.7
76								0.9	0.8	1.0	1.2	1.4	1.6	1.8	1.9	2.2	2.4	2.6	2.9	3.2	3.4	3.7	4.0	4.6
89													0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.6	1.7	1.8	2.0
102																				0.6	0.7	0.8	0.8	0.9
108																					0.6	0.6	0.7	0.7
	27	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**40**	**42**	**44**	**46**	**48**	**50**	**53**	**55**	**58**	**60**	**65**	**70**
70	7.2	7.8	8.3	8.9	9.4	10	11																	
76	4.3	4.9	5.2	5.6	6.0	6.3	6.7	7.0	7.4	7.8	8.2	8.7	9.5	10	11	12								
89	2.1	2.3	2.4	2.6	2.7	2.9	3.1	3.2	3.4	3.6	3.8	4.0	4.4	4.8	5.2	5.7	6.1	6.6	7.4	7.8	8.8	9.3	11	12
102	1.0	1.1	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.9	3.1	3.4	3.7	4.1	4.4	5.0	5.8
108	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.85	2.0	2.2	2.4	2.6	2.9	3.1	3.4	3.6	4.2	4.8
127													0.77	0.84	0.9	1.0	1.1	1.17	1.3	1.4	1.5	1.6	1.9	2.2
																						0.7	0.8	0.9
																								0.7
	75	**80**	**85**	**90**	**95**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**	**220**	**240**	**260**	**280**	**300**	**320**	**350**	**375**	**400**
102	6.5	7.4	8.2	9.2	10	11																		
108	5.4	6.1	6.9	7.6	8.5	9.4	11.2	13.0																
127	2.5	2.8	3.2	3.5	3.9	4.3	5.1	6.0	7.0	8.0	9.0	10	11	13										
152	1.0	1.2	1.3	1.5	1.6	1.7	2.1	2.5	2.8	3.3	3.7	4.2	4.3	5.2	5.8	6.3	7.5	8.8	11	12	13			
159	0.8	0.9	1.0	1.2	1.3	1.4	1.8	2.0	2.3	2.6	3.0	3.4	3.7	4.2	4.6	5.1	6.0	7.1	8.3	9.5	11	12	14	16	19
194										0.8	1.0	1.1	1.2	1.3	1.5	1.7	2.0	2.3	2.6	3.0	3.4	3.8	4.5	5.2	6.0

Example for friction loss in mainline:

- **Required to know:** Friction loss in 108mm pipe for 40m³/h flow?
  Go to 40m³/h as circled above, then go to line marked 108mm and horizontally to 1.7% circled.
  Thus for 100m of 108mm pipe and a flow of 40m³/h, the friction loss is 1.7m

Maximum sprinklerline length for given pipe size, nozzle, nozzle pressure and 20% pressure loss											
Precipitation rate (mm/h) on indicated spacing											
Sprinkler spacing 12 x 12m	6	7.5	9	10.5	12	13.5	15	16.5	18	19.5	21
Sprinkler spacing 12 x 18m	4	5	6	7	8	9	10	11	12	13	14
Capacity (m^3/h)	0.86	1.07	1.30	1.51	1.72	1.94	2.16	2.38	2.60	2.80	3.00
Nozzle sizes (")	9/64	5/32	9/64x3/32	5/32x3/32	11/64x3/32	3/16x3/32	3/16x1/8	3/16x1/8	13/64x1/8	7/32x1/8	7/32x1/8
Pressure (kPa)	300	310	320	320	320	310	280	340	320	300	360
PIPE SIZE (mm)	**Maximum length (in m) of sprinklerline for indicated pipe size**										
40	120	96	84	72	72	60	48	–	–	–	–
50	168	144	132	120	108	96	84	84	72	72	72
70	324	276	252	228	204	192	168	168	156	144	144
76	384	336	300	276	252	228	204	204	180	168	168
89	516	444	396	360	336	300	264	264	252	228	228
102	660	576	516	468	432	396	348	348	324	300	300
108	732	636	564	504	468	420	384	384	348	324	324
Precipitation rate (mm/h) on indicated spacing											
Sprinkler spacing 18x18m	5	6	7	8	9	10	11	12	14		
Capacity (m^3/h)	1.62	1.94	2.27	2.59	2.92	3.24	3.56	3.89	4.53		
Nozzle sizes (")	5/32x3/32	3/16x3/32	3/16x1/8	13/16x1/8	7/32x1/8	15/64x1/8	1/4x1/8	1/4x1/8	9/32x1/8		
Pressure (kPa)	380	310	310	320	320	350	320	390	360		
PIPE SIZE (mm)	**Maximum length (in m) of sprinklerline for indicated pipe size**										
40	72	60	48	–	–	–	–	–	–		
50	162	126	108	108	90	90	90	72	72		
70	228	252	216	198	180	180	162	162	144		
76	360	288	270	234	216	216	180	198	162		
89	486	396	360	324	288	288	252	252	234		
102	612	504	468	414	378	378	342	342	288		
108	666	558	504	450	414	396	360	378	324		

Example for determination of pipe size:

Required to know: What pipe size to use if 17 sprinklers are used on 12m spacing at 1.51m^3/h each? Look under capacity 1.51m^3/h down to pipe size 70mm and read 228 which is longer than 17 x 12 = 204 therefore 70mm pipe is recommended

GOLF COURSE IRRIGATION

The House of Irrigation, in conjunction with German sprinkler pioneer Perrot, complements the development of new golf courses and the upgrading of existing courses with long-lasting, ecologically beneficial irrigation techniques that assist in achieving optimum playing conditions. Perrot pop-up sprinkler systems have been successfully installed on over 300 golf courses worldwide.

For the player, the golf course is a place to forget the hustle and bustle of daily life for a few hours in well cared for, relaxing surroundings. For the manager, it is a business which should require the minimum of labour and time – and at the same time ensure high profitability and a good return on investment. The House of Irrigation, in conjunction with Perrot, has something to offer for both, delivering rain on request to achieve the perfect course no matter the location.

Sprinkler range

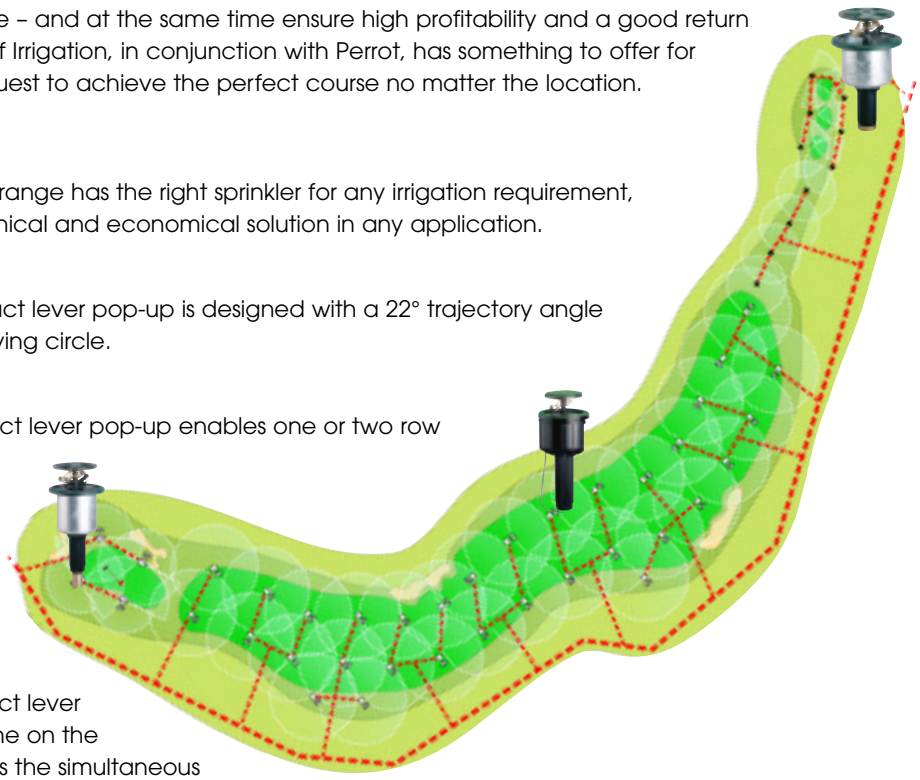
The versatile Perrot pop-up range has the right sprinkler for any irrigation requirement, offering a tailor made technical and economical solution in any application.

Tees:

The Perrot LVZA impact lever pop-up is designed with a 22° trajectory angle and adjustable spraying circle.

Fairways:

The Perrot LVZR impact lever pop-up enables one or two row irrigation. It has a 22° trajectory angle and comes optional with a head valve and decoder.



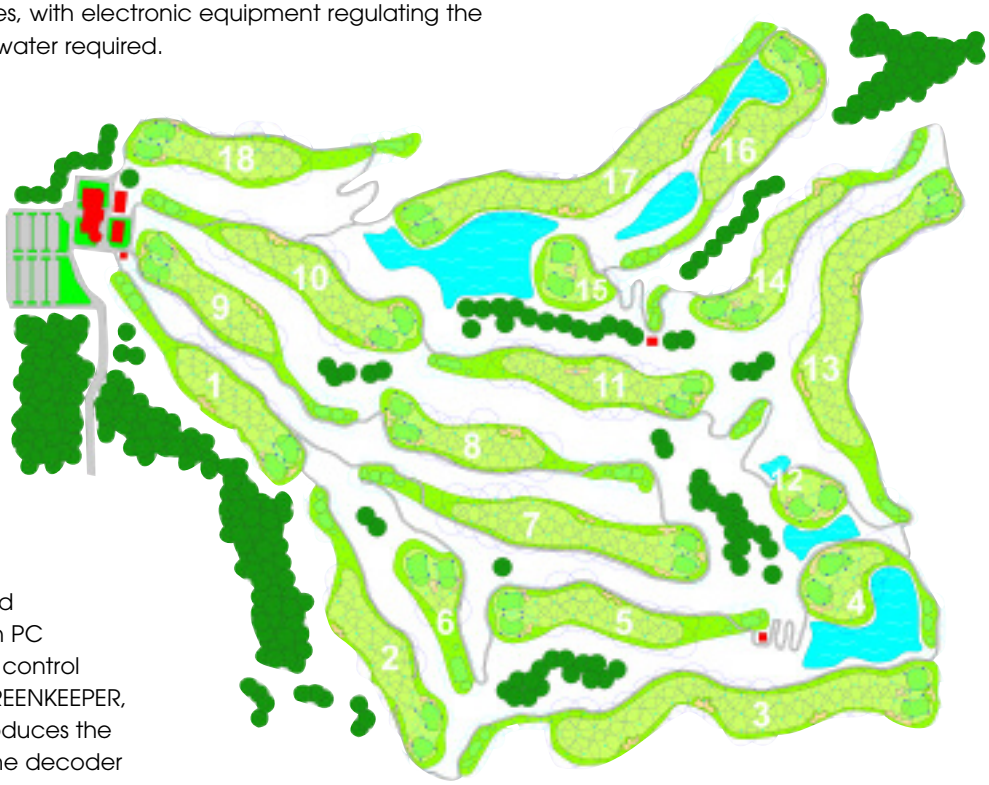
Greens:

The Perrot LVZE impact lever pop-up is the only one on the market which permits the simultaneous irrigation of both green and apron, with different precipitation densities at a rate of 4:1 to 8:1.

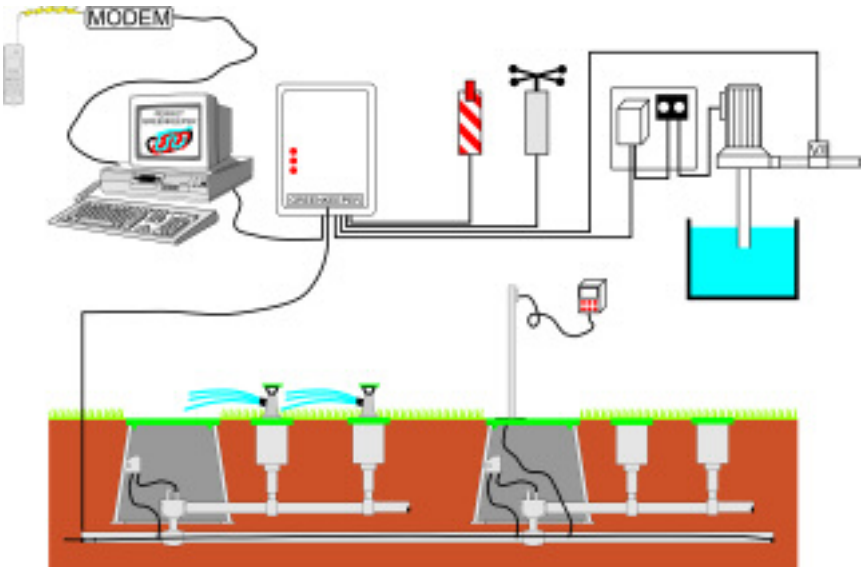
Sprinklers are installed flush with the ground and are connected to an underground pipeline. They distribute water exactly where irrigation is required.

Computer control system

The use of automatic irrigation control systems is standard on modern golf courses, with electronic equipment regulating the output of water required.



With its third generation PC supported control system, GREENKEEPER, Perrot introduces the future of the decoder system. Irrigation programmes are generated on a PC and transferred to the VCU with the push of a button. Electrical impulses are then sent to up to 250 decoders which activate the solenoid valves and sprinklers. The main advantage of this system is that only a single two-cord cable needs to be installed. This cable is connected to each of the decoders, thus there is no need for a separate cable from each decoder to the control system.



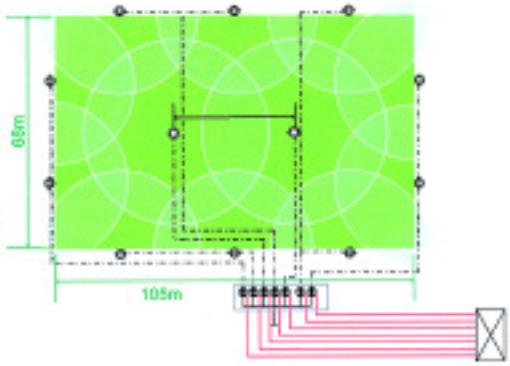
The GREENKEEPER is the first irrigation programme on the market which offers a graphical representation of all playing lanes in real time. This gives the operator an actual overview of all runs and valves with a status indication ('active'/'not active') and the capacity to enter programmes to effect changes. GREENKEEPER for the first time offers operators radio control via a cellphone which communicates with the PC, giving unlimited access and flexibility.

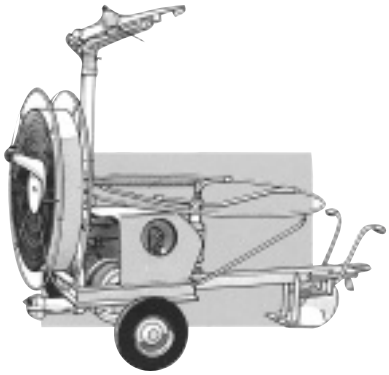
The House of Irrigation, in conjunction with Perrot, offers a full design and installation service for golf course irrigation.
For more information, contact The House of Irrigation on tel +27 12 810 9326, fax +27 12 803 8707 or e-mail: house@irrigation.co.za.

IRRIGATION OF SPORTSFIELDS AND HORSE RACING TRACKS

The House of Irrigation offers five different options for the irrigation and upgrading of sportsfields to the highest standards and specifications:

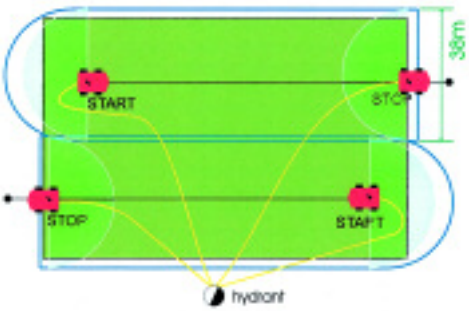
1. **Perrot pop-up sprinklers** with fully automatic or manual control
   - Operating pressure: 5.5–7 bar
   - Precipitation: 2.5mm/h–10mm/h
   - Water consumption: 16–20m³/h
   - Type of sprinkler: LVZR 22
   - Manual or automatic control via Perrot Water Control (see p66)





2. A **crawler** with a sprinkler gun mounted on top, which moves along a cable by means of water-driven propulsion
   - Operating pressure: 4–6 bar
   - Precipitation: 2.5–4mm/h
   - Water consumption: 14.7–48m³/h
   - Type of sprinkler: ZN 22 W
   - Refer to pp29-30 of catalogue

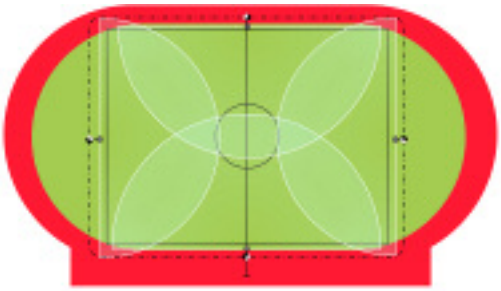
3. The **Perrot Rollcart**, which moves along a cable by means of a water-driven turbine. An impact sprinkler is mounted on top of the rollcart.
   - Operating pressure: 4–7 bar
   - Precipitation: 2.5–4.0mm/h
   - Water consumption: 2.3–4.2m³/h
   - Refer to pp27-28 of catalogue

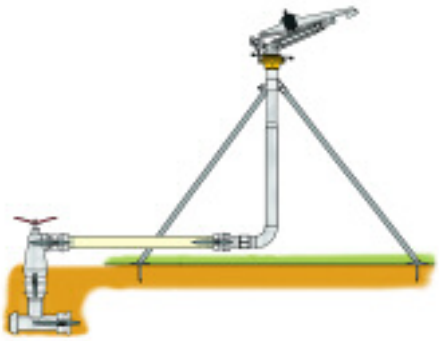


4. A **solid set system** with quick-coupling pipes and sprinklers
   - Operating pressure: 2.5–5 bar
   - Precipitation: 2.3–15.7mm/h
   - Water consumption: 1.0–5.0m³/h

5. A **large area sprinkler gun** fixed to a mobile gunstand and flexible hose or quick-coupling pipes and connected to hydrants

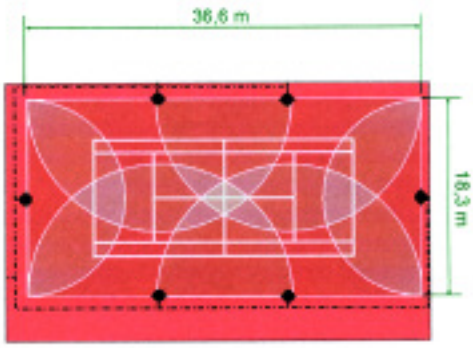
- Operating pressure: 5.5–6.0 bar
- Precipitation: 18.5mm/h
- Water consumption: 33m³/h
- Type of sprinkler: ZN 23 W





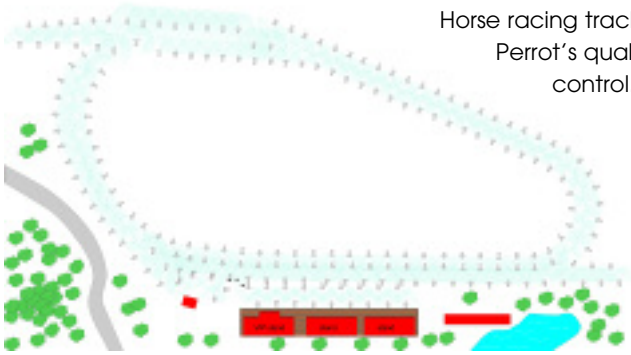
Tennis courts

The House of Irrigation also has a solution for the irrigation of tennis courts with red-gravel and grass surfaces. Courts can be irrigated and moistened using Perrot pop-up sprinklers with fullly automatic or manual control.



- Operating pressure: 4–5 bar
- Precipitation: 10mm/h
- Water consumption: 7.2m³/h
- Type of sprinkler: LVZA 22

Horse racing tracks



Horse racing tracks and showjumping grounds can be irrigated using Perrot's quality pop-up sprinklers with fully automatic or manual control.

- Types of sprinkler: LVZA 22, LVZE 22 and/or LVZR 22

The House of Irrigation, in conjunction with Perrot, offers a full design and installation service for the irrigation of sportsfields and horse racing tracks.
For more information, contact The House of Irrigation on tel +27 12 810 9326, fax +27 12 803 8707 or e-mail: house@irrigation.co.za.