



Daw Mill Colliery, the UK's former single largest coal producing mine installed the new Quinmax S500 in April 2010. The 5 plunger pump was put to use on 32 s Coalface on a trial basis for one year. Due to the increased flow from the S500 pump compared to the existing installed S300 pumps (approximately 70%) this would allow Daw Mill to run the face with the S500 only.

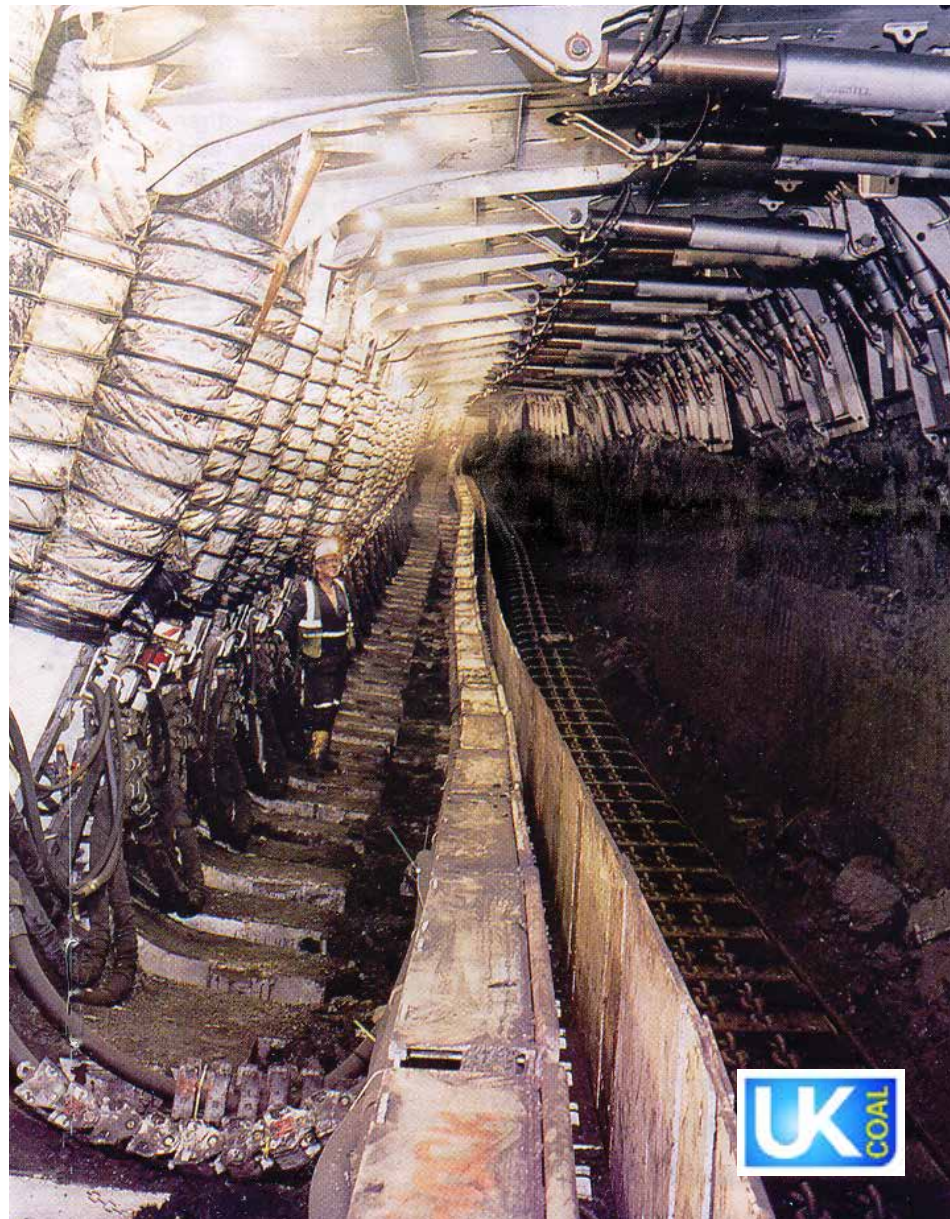
The pump since installation has never broken down or caused any delay to production. During the first year of operation the pump system was under continuous monitoring, ensuring internal oil temperatures and pressures, noise and vibration levels were all within tolerance. There were no significant issues raised during this period.

The mine has been running 2 x S300 pumps 6 days per week 24 hours per day with a total power consumption of 448 kW. With a cost per kW/hr of 4.8p the total running cost is £3096 per week. Using 1 x S500 fitted with a 300kW motor and utilising its increased performance the running cost is only £2073 per week.

Allowing for the fact that during lower demand periods one of the S300 pumps could be in an unloaded condition, but still running the overall power saving for UK Coal is significant. This has been calculated to be in excess of £24,000 for the first year of operation.

“This trial has been very successful and the S500 has been awarded a UK Coal Acceptance Certificate. The power savings have been great, as were the reductions in operational noise levels, which are very noticeable in the mine.”

J.A Shaw, Mechanisation and Asset Manager



HEAD OFFICE

RMI Pressure Systems
1 Wolverton Street
Manchester
M11 2ET
United Kingdom
T: +44 (0)161 274 2451
E: rmiinfo@armlink.com

AUSTRALIA OFFICE

RMI Pty. Ltd
40 Aruma Place
Cardiff
NSW 2285
Australia
T: +61 (02)4954 0163
E: sales@rmipsl.com.au

CHINA OFFICE

RMI Pressure Systems
Room A050
10th Floor Nexus Center
No.19 East Third Ring Road
Chaoyang Distring
Beijing, China
T: +86-15-65290-0513
E: rmiinfo@armlink.com

USA OFFICE

RMI Inc.
6599 Old Birmingham Highway
Jasper
Alabama 35501-8216
United States
T: +1 (205)483 0350
E: sales@repowermining.com

www.rmipsl.com

Quinmax S500 Series

for Mining Applications

RAMS

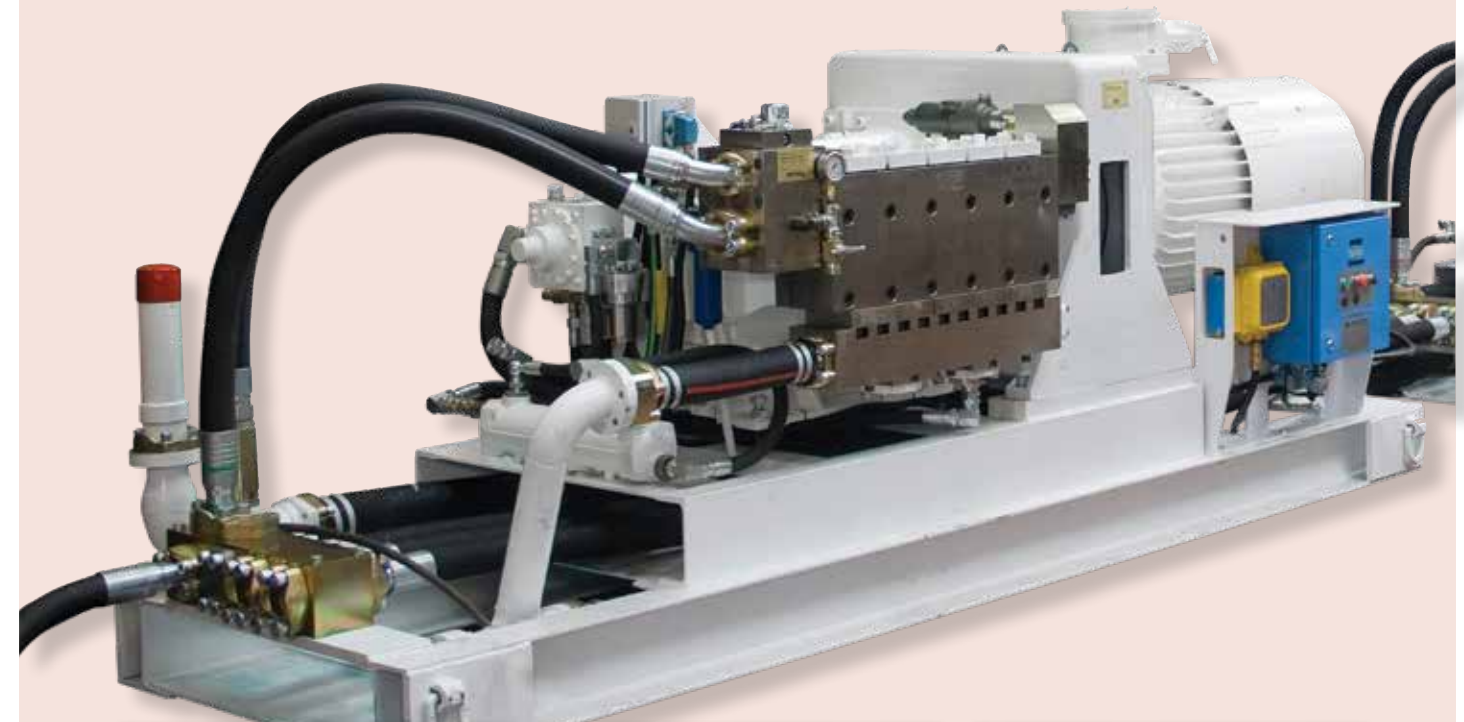
High purity alumina oxide ceramic or hardened stainless steel.

BEARINGS

Spherical roller main journals with lead bronze small and big ends.

GEARS

Precision ground steel to provide maximum life and optimum speeds.



INTEGRAL OIL PUMP

Providing forced oil lubrication to loaded bearings.

GLAND PACKING

Self-adjusting spring loading packing, for maximum sealing.

MOTOR

Flange mounted, on self aligning pedestal for trouble free installation.

The Quinmax S500 series pump is specified to provide a safe and reliable supply of high pressure water or water based fluids in a variety of industries including mining, petrochemicals, power generation, metal processing and site services.

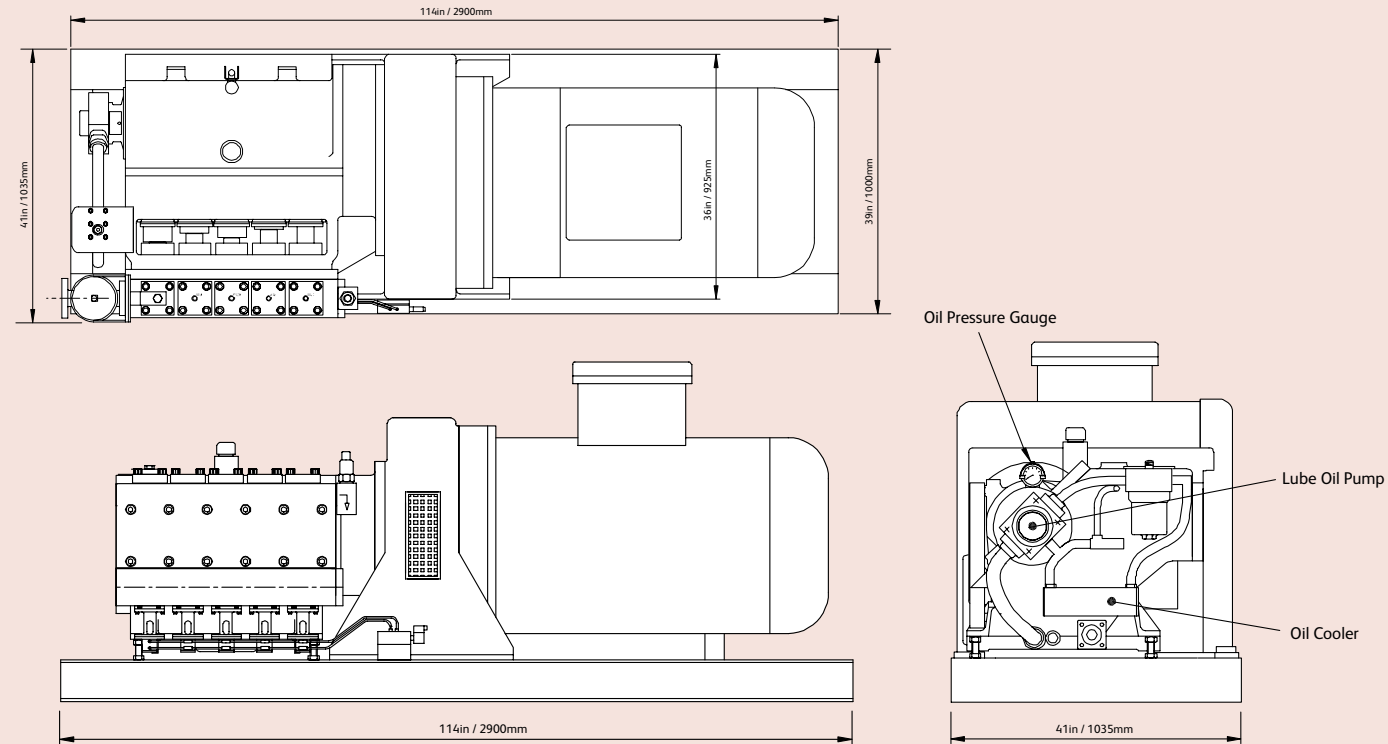
PUMP GENERAL PERFORMANCE DATA

Flow	76 - 839 l/min	20 - 222 USgpm
Pressure	2,070 - 193 Bar	30,023 - 2,799 psi
Motor Power	300 - 496 kW	400 - 540 HP



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PUMP DIMENSIONS



Note: Improvements in general design and modifications in detail will be embodied for the benefit of clients as and when introduced; consequently this specification is subject to alteration, as and when necessary, without notice.

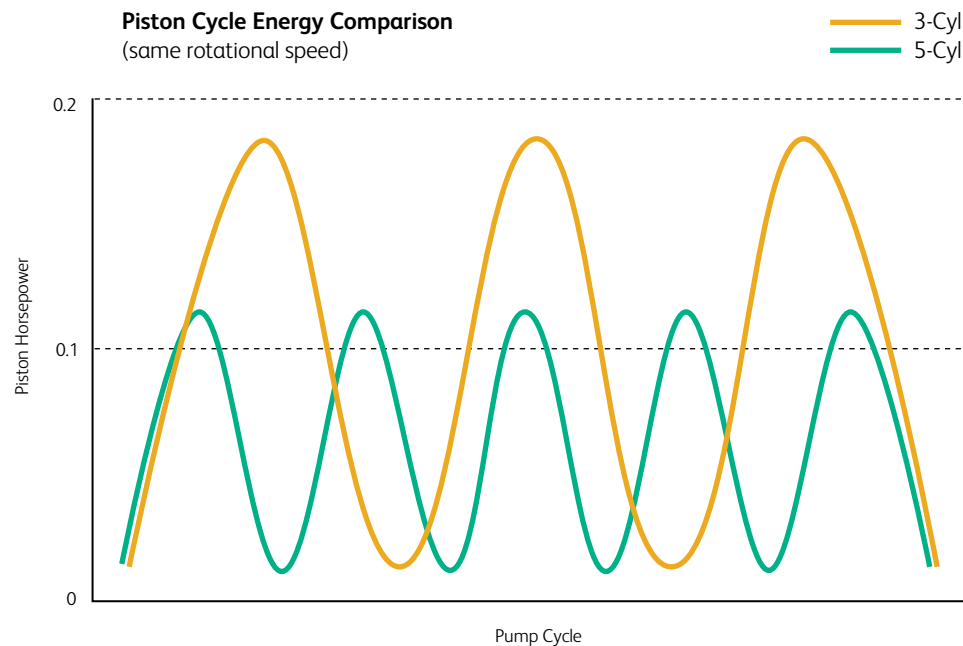
ADVANTAGE OF 5-CYLINDER DESIGN

The S500 pump uses a 5 plunger design which has several advantages over the more traditional 3 plunger design.

- Reduced Crankshaft and Bearing Loads leading to longer life and time between service intervals.
- A 40% reduction in the fluid velocity per plunger resulting in lower hydraulic noise.
- Slower Crank Speeds reducing mechanical wear and noise.
- Longer Stroke length leading to fewer reversals.
- Smoother pressure profile reducing the impact of surges on other critical items of equipment within the system.

All attributing to greater reliability and less down time of not only the pumps but other key system components such as hoses and valves. The combined design features have shown to reduce the decibel level significantly.

Piston Cycle Energy Comparison
(same rotational speed)



Motor Speed 1,475rpm Crank Speed 492rpm				
Max Power 300kw				
Stroke Length 70mm				
RamØ	Pump Flow		Pump Pressure	
mm	L/min	US gpm	BAR	PSI
24	76	20	2,070	30,023
28	103	27	1,379	20,001
30	119	31	1,379	20,001
40	211	56	700	10,153
45	268	71	575	8,340
50	331	87	420	6,092
55	400	105	418	6,063
60	476	126	347	5,033
62	509	134	325	4,714
65	559	148	296	4,293
70	643	170	255	3,698
75	737	195	220	3,191
80	839	222	193	2,799

Motor Speed 1,475rpm Crank Speed 523rpm				
Max Power 317kw				
Stroke Length 70mm				
RamØ	Pump Flow		Pump Pressure	
mm	L/min	US gpm	BAR	PSI
24	81	21	2,070	30,023
28	110	29	1,379	20,001
30	126	33	1,379	20,001
40	224	59	700	10,153
45	284	75	575	8,340
50	351	93	420	6,092
55	426	113	416	6,034
60	507	134	343	4,975
62	541	143	322	4,670
65	595	157	292	4,235
70	683	180	252	3,655
75	784	207	220	3,191

Motor Speed 1,475rpm Crank Speed 555rpm				
Max Power 337kw				
Stroke Length 70mm				
RamØ	Pump Flow		Pump Pressure	
mm	L/min	US gpm	BAR	PSI
24	86	23	2,070	30,023
28	117	31	1,379	20,001
30	134	35	1,379	20,001
40	239	63	700	10,153
45	302	80	575	8,340
50	373	99	420	6,092
55	451	119	416	6,034
60	537	142	343	4,975
62	574	152	322	4,670
65	631	167	292	4,235
70	724	191	252	3,655
75	832	220	220	3,191

Motor Speed 1,475rpm Crank Speed 605rpm				
Max Power 367kw				
Stroke Length 70mm				
RamØ	Pump Flow		Pump Pressure	
mm	L/min	US gpm	BAR	PSI
24	94	25	2,070	30,023
28	127	34	1,379	20,001
30	146	39	1,379	20,001
40	260	69	700	10,153
45	329	87	575	8,340
50	406	107	420	6,092
55	493	130	416	6,034
60	585	155	343	4,975
62	626	165	322	4,670
65	687	181	292	4,235
70	797	211	252	3,655

Motor Speed 1,475rpm Crank Speed 653rpm				
Max Power 391kw				
Stroke Length 70mm				
RamØ	Pump Flow		Pump Pressure	
mm	L/min	US gpm	BAR	PSI
24	101	27	2,070	30,023
28	137	36	1,379	20,001
30	158	42	1,379	20,001
40	280	74	700	10,153
45	355	94	575	8,340
50	439	116	420	6,092
55	531	140	419	6,063
60	633	167	343	4,975
62	675	178	322	4,670
65	742	196	292	4,235

Mechanical efficiency 90% Volumetric efficiency 95%