

MULTIFLO®
Mine Dewatering Solutions

Excellent
Minerals
Solutions

WEIR
MINERALS

MF Heavy Duty Mine Dewatering Pumps

Keep Your
Mines Dry



Multiflo® MF diesel pumps – premium performance in the toughest conditions

Weir Minerals Multiflo is the market leader for high quality mine dewatering pump units, leading with the heavy duty 'MF' range of auto vacuum primed, diesel driven pump units. The Multiflo® MF pump units are custom-built to ensure the very best performance for your operation and survival under the toughest operating conditions.

More than 30 years of mine dewatering experience makes Multiflo® pumps the best choice for mine dewatering applications.

Multiflo® pump units were first produced in 1976, and were designed and manufactured to provide a purpose built solution to reliably and efficiently pump clean the open cut mining pits.

The diesel driven, vacuum primed MF range of pump units are capable of pumping not only water against high head situations, but also large quantities of solids and slurries from the open pits.

The Multiflo® MF range can be fully customised to suit mine specific applications:

- A range of corrosion and wear resistant materials are available to suit aggressive mine water
- A wide combination of engines and wet-ends to provide optimum pumping performance

Customised options available including suction and discharge arrangements, monitoring instrumentation, auto start/stop function, customer colour and more.

1: A Multiflo® MF-420 operating at a mine in Indonesia

2: Newmont's Batu Hijau mine on the Indonesian Island of Sumbawa rely on a fleet of Multiflo® MF pump units for their pit dewatering

3: A Multiflo® MF-385 in action at Ok-Tedi Mine Papua New Guinea



- Heavy duty construction
- Vactronic® auto vacuum priming system
- Choice of diesel engine brands
- High head pumping for the deepest mine pits
- Compliant with mine specifications
- Wide range of optional equipment

Self priming pump units

Designed to withstand the harsh, arduous operating conditions found on mining sites



Custom dewatering solutions

Multiflo® pumping units offer the optimum solution for your dewatering needs rather than a “one-size-fits-all” approach, with fully customised feature options such as:

- Skid, trailer or pontoon mounted units
- Diesel or electric drive with your choice of diesel engine or electric motor
- Wide range of pump ends available
- Variety of corrosion and wear resistant materials available
- Customised instrumentation

Reliable long lasting equipment

Multiflo® self-priming pump units are designed to provide years of reliable performance with feature such as:

- Heavy duty skids and trailers
- Continuous welds
- Stainless and steel galvanised
- Options available
- Vactronic® auto-prime vacuum system
- Chrome iron pump ends
- Canopy to protect engine as standard
- 24 hour fuel tank



Multiflo® MF pump features include:

- Engineered pump solution
- Fully customised to your needs
- Built for mining
- Highest quality build
- VisMode® control system
- Vactronic® priming system
- Heavy duty steel fabricated pump base and canopy
- Continuous welding (no stitch welding that traps water causing rust in inaccessible places)
- Two pack epoxy paint system
- Comprehensive operations and spare parts manuals



1: Pontoon mounted Multiflo® MF pump units in operation at PT KPC in Indonesia

2: Two Multiflo® MF pumps in operation at Ok-Tedi mine in Papua New Guinea

Weir Minerals are specialists in delivering and supporting slurry and mine dewatering equipment solutions including pontoons, pumps, hydrocyclones, valves and wear resistant linings for global mining and mineral processing, the power sector, and general industry.

Focusing upon what we do best, Weir Minerals delivers on what matters to you most. This simple philosophy, combined with being part of the global Weir Group, provides you with added benefits over alternative suppliers.

Weir Minerals brings together an extensive global service and manufacturing presence combined with an investment capability able to develop, support, and sustain market leading technologies that deliver enhanced performance in your process critical applications.

Application mounting options

Weir Minerals Multiflo provides varying mounting option applications, following careful consideration of your mobility requirements

Mounting options

With varying types of mining processes and environmental conditions, the MF range has the solution for pump unit mobility.

There are several types of mounting options for the pump units:

- Heavy duty skid bases
- Steel pontoons
- Mining trailers

So whatever the conditions the pump unit is operating in, Multiflo® pump units have the mounting option solutions.



1: Multiflo® MF385 pontoon mounted pump in operation

2: Trailer mounted Multiflo® MF pump at a mine in the USA



The same heavy duty engineering philosophy of the Multiflo® MF pump unit range is applied to the mounting options.

The heavy duty skids are fitted with a dozer push-bar, tow chains and Bis-alloy wear plate. The Multiflo® MF pump unit base is easily removed from the heavy duty skid allowing easy replacement of wear plates when required.

Stability is foremost with the steel pontoons. The pontoons are all sized specifically for the pump unit it is to float. The pontoon hulls are designed with multiple air tight flotation cells. The pontoons are able to be pushed or towed around mine-site, just like the heavy duty skids.

Mine trailers are available for the smaller pump units. These heavy duty trailers are designed to survive the harshest of mining environments.



3: Heavy duty bolt on Skid comes with tow chains

Through a customer focused strategy Weir Minerals has used its unique technologies to develop an unrivalled range of mine dewatering, process water, and specialist slurry processing equipment for some of your most critical processes. This means that today's Weir Minerals is much more than a pump company.

"Understanding the critical role our products play in the customer's process, we ensure that Weir Minerals consistently outperforms our competitors and exceeds customer expectations."



Scot Smith
Divisional Managing Director

Custom engineered solution

Weir Minerals Multiflo has the ability to custom engineer a pontoon to meet your specific requirement. Whether you need diesel or electric drive, a simple float for a single pump or a pontoon to house multiple pumps, our in-house design group can provide the optimal solution.

At Weir Minerals Multiflo, we bring the complete pontoon and pumpset under a single company; no dealing with separate suppliers. Using state-of-the-art 3D-CAD modelling, our engineers ensure the pumpset and pontoon are balanced for optimal stability; lead times are reduced, assembly and installation problems are eliminated.

- Variety of corrosion and wear resistant materials available
- Designed to be skidded around site, no cranes required
- Pontoons may be customised
- Walkways provided upon request
- Available in different materials



1



2



3

1: Pontoon mounted diesel pump and walkway

2: Diesel driven pumps in action

3: Multiflo® MF385 pontoon mounted in operation at Goonyella Riverside in Queensland's Bowen Basin

4: Steel pontoon comes with skid runner, pushbar (tow chains option also available - not shown)



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A message from Paul Avey
Managing Director

On one level, we're in the business of developing and manufacturing the highest quality self-primed mine pumps. With a history that goes back 30 years, we also lead the industry with our repair and overhaul capacity, spares back-up, and specialist expertise in providing tailor-made dewatering solutions.

Vismode® control system

The Vismode® control system is a microprocessor based electronic controller designed to operate a Weir Minerals Multiflo dewatering pump.

The Vismode® control system interfaces with the engine ECU and sensors to control the operation of the pump and shutdown the engine in the event of a fault. An indicator panel mounted on the front of the enclosure shows the status of the pump, an internal LCD screen and keypad provide further pump information and configuration options. The controller additionally logs the engine data, input and output states to internal memory.



Vismode® control system features include:

- LED indicator panel
- LCD and keypad interface for controller configuration and diagnostics
- J1939 interface to all major engine supplier ECUs (CATERPILLAR, CUMMINS, MERCEDES-BENZ, MTU)
- Internal logging of J1939 ECU data, input and output states
- USB Device – for access to internal memory
- USB Host – for transfer of logged data
- Over current protection for attached sensors and peripherals
- Priming control
- Programmable auxiliary inputs and outputs
- External start and stop inputs
- Controlled shutdown or timed shutdown on sensor faults (fully programmable)
- IP 66 rated enclosure, temperature and vibration resistant design

Even more important than this market offer is our passionate team of professionals who make it happen with real focus and determination. In an industry where a flooded hole can cost a million dollars a day in lost production, their efforts allow our customers to increase their profitability through improved mine productivity.

In truth, our business is really about supplying “dry mines” to customers so that they can concentrate on what they do best – mineral extraction.



Paul Avey
Weir Minerals Multiflo Managing Director

Vactronic[®] priming system

Priming a pump unit can be the most frustrating area for an operator. The Vactronic[®] vacuum priming system eliminates priming problems, Vactronic[®] vacuum prime automatically takes control of priming the pump.

Vactronic[®] priming system

When the Multiflo[®] MF pump unit is started, the Vactronic[®] priming system will quickly and efficiently lift the water up into the priming tank and the pump will then be primed. Once the water in the priming tank contacts the upper probe, the drive to the vacuum pump will disengage. If at any time the level in the priming tank drops below the upper probe, the drive will re-engage and lift the water up again to the probe level. With this system, the vacuum pump life is prolonged as it is only operating when required.

Waterloss shutdown

Waterloss shutdown is another feature of the Vactronic[®] priming system. If there is no more water to be pumped, the level in the priming tank will fall below the lower probe and activate a six minute timer to shut down the pump unit.



1: Typical Vactronic[®] priming arrangement

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First class construction

Attention to detail across the entire range of Multiflo® MF series pump units is crucial in ensuring the units not only perform in the harsh mining environment but also makes them user friendly for operators and maintenance crews.

There are no shortcuts when it comes to materials and construction methods used on the Multiflo® MF series pump units.

Examples of this are:

- Stainless steel control cabinet
- All welds are continuous (no stitch welding that traps water causing rust in inaccessible places)
- Internal baffling of pump unit base (fuel cell). All deck mounts are fully supported by the internal baffles.
- Two pack epoxy paint system

Years of pumping experience in the mining industry leads to continuous improvement of the pump units.

The Multiflo® MF series pump units are the result of years of development working in the mine pits, listening to the pump and maintenance crew and then incorporating the knowledge into their design.

- 1: Safer, clean work environment
- 2: First class construction
- 3: Attention to detail
- 4: Service points clearly labelled and easily accessed
- 5: Continuous welds (no stitch welding)
- 6: Lockable steel plate battery box



Customer options

The Multiflo® MF series pump units are available with a wide range of accessories and customised options.

These are just a few of the many options available.

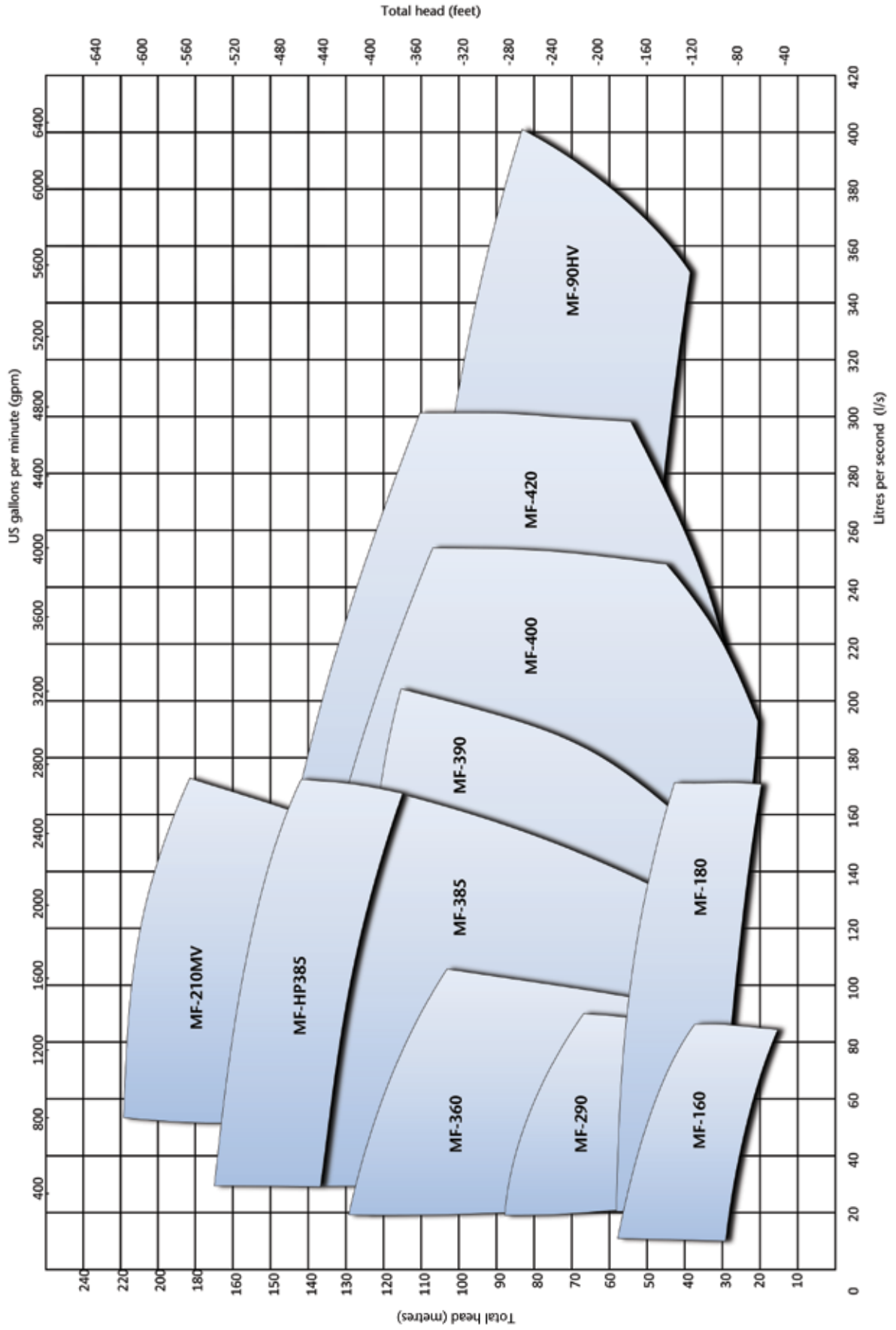
- Wear resistant materials
- Stainless steel wetted parts
- Choice of engine manufacturer
- Suction hose
- Suction boom & winch
- Discharge pipe
- Hydrau-Flo® safety refueling valves
- Auto lubrication
- Service lights
- Strobe lights
- High lift skid
- Pontoon
- Auto start/stop system
- Engineered custom options

For more details and customised options, please contact the Weir Minerals representative in your area.



- 1: Suction boom, hose and winch kit
- 2: Hydrau-Flo® safety refuelling system
- 3: Mining trailer
- 4: Auto greaser
- 5: Fast fill service points
- 6: Service lights

Multiflo® MF Pump Unit Quick Selection Chart



This information is a guide only and should be confirmed by your Weir Minerals representative before using.

Multiflo® Pump Unit Dimensions

Model	Pump Inlet / outlet mm (inch)	Shutoff Head metres (ft)	Max Flow l/s (gpm)	Engine Kw min* (hp)	Fuel tank litres (gal.)	A mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)	E mm (inch)	F mm (inch)	G mm (inch)	H mm (inch)	I mm (inch)	Mass Wet Kg. (lbs)	Mass Inc. Skid Kg. (lbs)	Mass Inc. Pont. Kg. (lbs)
Multiflo® MF160	150/150 (6/6)	56 (184)	90 (1426)	58 (78)	580 (153)	2800 (110)	1125 (44)	1470 (58)	4264 (168)	1200 (47)	1635 (64)	6410 (252)	3500 (138)	2586 (102)	2230 (4916)	2740 (6041)	7129 (15717)
Multiflo® MF180	200/200 (8/8)	54 (177)	140 (2219)	90 (121)	1100 (291)	3450 (136)	1400 (55)	1825 (72)	4910 (193)	1470 (58)	2085 (82)	7710 (303)	3820 (150)	2825 (111)	4000 (8818)	4735 (10439)	10890 (24008)
Multiflo® MF290	200/150 (8/6)	85 (279)	100 (1585)	105 (141)	1100 (291)	3450 (136)	1400 (55)	1850 (73)	4910 (193)	1470 (58)	2110 (83)	7710 (303)	3820 (150)	2850 (112)	4000 (8818)	4735 (10439)	10890 (24008)
Multiflo® MF360	200/150 (8/6)	127 (417)	110 (1743)	168 (225)	1800 (475)	4200 (165)	1800 (71)	2230 (88)	5816 (229)	1890 (74)	2446 (96)	8910 (351)	3820 (150)	3346 (132)	7500 (16534)	8550 (18849)	15750 (34722)
Multiflo® MF380	200/150 (8/6)	110 (361)	150 (2377)	224 (300)	1800 (475)	4200 (165)	1800 (71)	2250 (89)	5816 (229)	1890 (74)	2466 (96)	8910 (351)	3820 (150)	3366 (133)	7700 (16976)	8750 (19290)	15950 (35163)
Multiflo® MF385	200/150 (8/6)	135 (443)	160 (2536)	288 (386)	1800 (475)	4200 (165)	1800 (71)	2300 (91)	5816 (229)	1890 (74)	2950 (116)	8910 (351)	3820 (150)	3950 (155)	7800 (17196)	8850 (19511)	16050 (35383)
Multiflo® MF385HP	200/150 (8/6)	165 (541)	160 (2536)	310 (415)	1800 (475)	4200 (165)	1800 (71)	2300 (91)	5816 (229)	1890 (74)	2950 (116)	8910 (351)	3820 (150)	3950 (155)	8150 (17967)	9200 (20282)	16400 (36155)
Multiflo® MF390	200/150 (8/6)	120 (394)	200 (3170)	310 (415)	4000 (1057)	6240 (246)	2040 (80)	3380 (133)	8516 (335)	2121 (83)	3796 (149)	10710 (422)	5120 (202)	4660 (183)	13900 (30644)	17680 (38977)	25900 (57098)
Multiflo® MF90HV	305/246 (12/10)	110 (361)	420 (6657)	448 (600)	2600 (687)	5300 (209)	1800 (71)	3250 (128)	6710 (264)	1890 (75)	3450 (136)	10710 (421)	4520 (178)	4520 (178)	12500 (27556)	13600 (29982)	22500 (49604)
Multiflo® MF210MV	200/150 (8/6)	210 (689)	170 (2695)	448 (600)	2600 (687)	5300 (209)	1800 (71)	3250 (128)	6710 (264)	1890 (75)	3450 (136)	10710 (421)	4520 (178)	4520 (178)	12500 (27556)	13600 (29982)	22500 (49604)
Multiflo® MF400	200/150 (8/6)	152 (499)	250 (3963)	448 (600)	4000 (1057)	6240 (246)	2040 (80)	3470 (137)	8516 (335)	2121 (83)	3886 (153)	10710 (422)	5120 (202)	4750 (187)	16000 (35274)	19780 (43606)	28000 (61728)
Multiflo® MF420	200/150 (8/6)	152 (499)	300 (4755)	536 (718)	4000 (1057)	6240 (246)	2040 (80)	3470 (137)	8516 (335)	2121 (83)	3886 (153)	10710 (422)	5120 (202)	4750 (187)	18100 (39904)	22480 (49556)	30700 (67680)

Notes: Minimum required continuous engine power. Dimensional data is metric with imperial shown in (). This information is a guide only and should be confirmed by your Weir Minerals representative before using.

Total Customer Support — Spare Parts and Service

Quality, value and service commitment are the foundation of customer satisfaction. Our extensive dewatering experience and knowledge adds value to all that we do for our customers.

Total Customer Support is about delivering on promises. It is about delivering units and spare parts on time. It is about having commissioning and service personnel locally available to start-up and train customer staff. It is also about having parts available where and when they are needed.

For example, our facilities in Balikpapan, Sengatta and Banjarbaru, Indonesia support the extensive open-pit coal mines in East Kalimantan province.

We also have nine Australian service centres at Beresfield (NSW), Wollongong (NSW), Rockhampton (QLD), Henderson (WA), Somersby (NSW), Sale (VIC), Kalgoorlie (WA) and Bunbury (WA).

Weir Minerals Multiflo is also part of more than 3000 employees in the Weir Minerals Division. The Division has a very broad global footprint with Total Care service centres and operations to support the mining industry, on every continent.

Our culture is one of commitment and our customer relationships are based on trust and integrity. We aim to deliver what we promise.



Balikpapan



Banjarbaru



Beresfield



Kalgoorlie



Rockhampton



Henderson

WARMAN®
Centrifugal Slurry Pumps

GEHO®
PD Slurry Pumps

LINATEX®
Rubber Products

VULCO®
Wear Resistant Linings

CAVEX®
Hydrocyclones

FLOWAY® PUMPS
Vertical Turbine Pumps

ISOGATE®
Slurry Valves

MULTIFLO®
Mine Dewatering Solutions

HAZLETON®
Specialty Slurry Pumps

LEWIS PUMPS™
Vertical Chemical Pumps

BEGEMANN PUMPS™
Centrifugal Process Pumps

WEIR MINERALS SERVICES



Weir Minerals Offices

Banjarbaru
Balikpapan
Coolum

The Weir Group PLC, founded in Scotland in 1871, is a leading global engineering company with more than 8,000 employees worldwide and is listed on the London Stock Exchange.

Weir Minerals Multiflo is part of the Weir Minerals Division and has primary global design responsibility for the Multiflo® self-prime dewatering pump product range and Hydrau-Flo® fuel filler valve.

Weir Minerals Multiflo and PT Weir Minerals Multiflo are business units of Weir Minerals Australia Ltd.

Weir Minerals Multiflo
15 Dacmar Road
Coolum Beach QLD 4573
Tel +61 7 5449 3000
Fax +61 7 5446 4304
multiflo@weirminerals.com
www.weirminerals.com

P.T Weir Minerals Multiflo
Jl. Mulawarman No. 29A RT.003 Batakan Kecil Kel. Manggar Balikpapan
- East Kalimantan
Tel +62 542 746 098 (Hunting) Fax +62 524 746 099

Branch Office
Jl. Ahmad Yani Km. 33,6 No. 04 RT.003 RW.001 Kel. Loktabat Selatan
Banjarbaru 70712 - South Kalimantan
Tel +62 511 477 3027 / 477 2357 Fax +62 511 4773583

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