



Est. 1911  
**DAVIESWAY**  
IDEAS TO FARM. EVERYDAY.

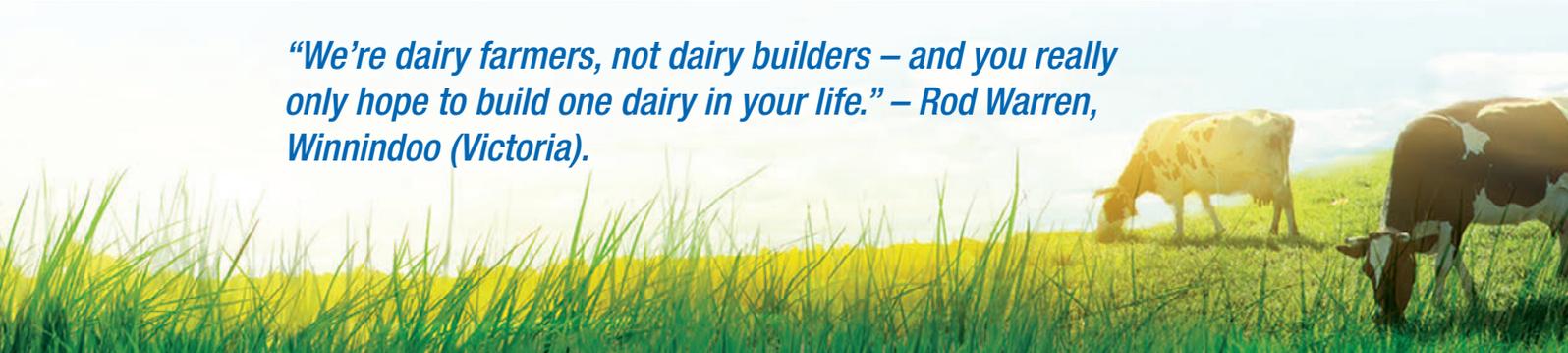
Est. 1960  
**DASCO**  
HYGIENE • HEALTH • NUTRITION

home of world-class dairy equipment & innovation



# Your dairy, your way

*"We're dairy farmers, not dairy builders – and you really only hope to build one dairy in your life." – Rod Warren, Winnindoo (Victoria).*





# Single & Double Mobile Milking Machines

*Every dairy should have one*

Whether you have a sick cow in a herd of 500, or a single animal which needs milking on a lifestyle farm – a portable milker is your game-changer.

*Single and double units available for milking cows, goats, sheep, camels, buffalo...*

## WORLD-CLASS TECHNOLOGY

- Mobile, tough & easy to use
- Perfect for injured/sick cows
- Robust milking cluster
- 30-litre stainless steel bucket
- Highly manoeuvrable large rubber wheels carry a heavy-duty trolley frame & handle
- Carbon Vane Vacuum Pump – no oil
- Cluster pulsation can be changed between 45-150 pulses/minute.

**Double**



*Milks 10- 15 cows per hour*

**Single**



*Milks 8-10 cows per hour*

### Milking machine specifications

Engine power	0.55kw
Speed	1245rpm
Pump flowrate	250l/min – 50-Kpa
Vacuum tank	20 litres
Vane type	Carbon



Contact Daviesway – 1800 666 269 • [daviesway.com.au](http://daviesway.com.au)

# WELCOME

## What a year it has been on so many levels.

COVID-19 undoubtedly cast a long, grim shadow across the globe and changed the way everyone interacts and will do business moving forward.

### POSITIVE NEWS

However, the really positive news for agriculture has been the way it has been able to continue to operate in a world that hopefully now appreciates the work our Australian farmers do every day to put healthy and nutritious food on our tables.

And, I have to say, it has been exciting to see the way our dairy farmers have rebounded from a number of forgettable seasons – this has been one of the high points for our team to be a part of.

I'd like to sincerely thank our customers for the amount of trust they have put in Daviesway – an Australian-owned and family-operated business – to manage and install projects for them this year.

### NEW PRODUCTS BUILD

We have had a gratifying uptake of some exciting new products, and to that end we are focussing on our capital equipment this edition to show what is out there, and what is possible.

Our new CR-1 Automatic Cup Removers are driven by wi-fi, and are now gaining significant traction in Australia and New Zealand. We have manufactured them together with our New Zealand counterparts at MilkTech NZ. Warren Farms recently included the CR-1 in its bespoke new build, which is showcased from p6. As did Australian Livestock Farms on p10.

### TWO CORE STRENGTHS – PRODUCTS AND PEOPLE

Our team also used its experience and knowledge to convert a 60-stand rotary into a 120-bail goat dairy, see p10.

I'd encourage you not to miss the read on p2, where our Specialist Dairy Projects Manager Nico Polato shares his insight on the pros and cons of retrofitting and building new dairies. Because there is often a solution waiting in plain sight, every dairy is different, and there are a couple of bullets to dodge within those decisions.

Industry respect for Nico's experience and knowledge is universal, and this is where our team excels – building your dairy, your way.

### 'THANK YOU' TEAM DAVIESWAY

I'd like to also take a moment to add that I am extremely proud of our team, and how they performed and continued to deliver on promises made, despite the restrictions. They put their noses to the grindstone, operated with amazing autonomy, and showed what can be achieved with solidarity and resilience. We highlight two of our team this edition – brothers in arms – Paul and Russel Dawson on p9.

We wish you all a very safe and happy Christmas and New Year, and may 2021 be the year where the world establishes a new kind of normal that we can all safely embrace.

Please enjoy the read, and if you have any questions, don't hesitate to contact any of our team.



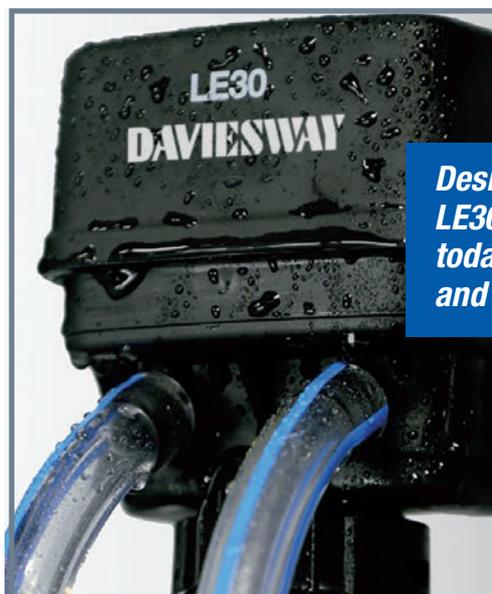
### NIKK TAYLOR

General Manager – Daviesway/DASCO  
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Email: nikk.taylor@daviesway.com.au

*Nikk Taylor has been with Daviesway/DASCO for 24 years, working across all aspects of the business.*

### WHO IS DAVIESWAY/DASCO?

*Daviesway is a family-owned Australian business, which is today home to a team of 70 staff located throughout the country. It has alliances with dealers, resellers and retail rural outlet stores across Australia. Its in-house manufacturing arm in Victoria includes a full service & technical team. Daviesway also includes a calf-rearing specialist department (including Australia's only dried colostrum for calves, kids and foals). Its in-house chemical manufacturing plant, DASCO, introduced pre-mixed teat sprays in Australia. Daviesway's strong networks with many of the industry's leading global industry players remains integral to it keeping in step with technology & innovation. Visit [daviesway.com.au](http://daviesway.com.au) for more information, videos, stories and feedback.*



## DAVIESWAY PULSATORS

*Designed by InterPuls the Servo-Direct LE30 & LP30 Pulsators present today's benchmark for precision, and robust reliability.*

**LP30** are individual pulsators, with an internal programmable Pulsation PCB. They only need an external filtered transformer (24VDC or 12VDC).

**LE30** are not provided with the internal PCB and must be operated by an external Pulsation Controller.

- Accurate and adjustable pulsation characteristics
- Completely sealed to ensure total protection against external moisture and water
- Can be flushed with water
- Low power usage
- Quick and easy to service (a complete maintenance takes less than 2 minutes)
- Available in a variety of configurations



Vuillermin Pastoral Co's 28-bail rapid exit herringbone (Yanakie, Victoria).



Nico Polato

## YOUR DAIRY, YOUR WAY

### A word to the wise

***Building a new dairy is a critical decision for any dairy farmer.***

*That's because the triggers to break new ground for a multi-million dollar capital investment in concrete, steel and technology also has the power to make or break a property's function or sale, depending on personal variables.*

*All of which can't be overstated enough, according to a man who's seen everything there is to see in this space – Daviesway's Specialist Dairy Projects manager, Nico Polato.*

*Nico says no one builds a new home without extensive plans and budgets, yet he still sees enough dairy operations pushing ahead with a new build, based on a design scribbled on the back of a cigarette packet.*

*And, he says that in today's market – if you're failing to plan, you're planning to fail....*

Daviesway's Special Dairy Projects manager Nico says his job typically is to challenge clients, so they make the right decisions and get the right result.

Having been with Daviesway for 17 years specialising in dairy builds, he said there are key questions that he always feels a responsibility to ask for his customer's sake.

*"There are some outcomes you can't predict, but a lot that you can. You've got to really think about this investment being for a minimum of 10 years,"* he said.

*"And ask yourself, 'What is your five and 10-year business plan for the farm?'*

*"Because if you're thinking of putting a rotary dairy on here 'because that's going to make you a lot of money', but you haven't got any succession or business planning, or a master farm plan in place; or you think you might sell it up in two years because you'll realise all this capital gain ... you're nuts.*

*"Save your money, and go and buy an apartment down by the ocean."*



An 80-unit rotary dairy at Australia's largest single-site dairy, Moxey Farms (Gooloogong, NSW).

Nico said succession plans could revolve around the potential to buy neighbouring farms, progressive takeover strategies, production increases or expansion plans.

*“We really drill down to what our customers want to achieve, because a new dairy build is a significant investment, and, we want our customers to be really comfortable with that decision.”*

## DESIGN AND PLANT

Nico said the Daviesway team has always been about their customers first, second and third. Once the decision is made to build, the question then turns to whether it should happen on a fresh site, or if it's going to be added on to an existing location.

*“And, then we start looking at design criteria until a client puts their finger on a particular plan and says, ‘Yep, that’s what I want’.*

*“From there, we start to qualify how we’re going to achieve it. That’s the easiest part of the whole process. Daviesway has a whole supermarket of milking equipment, which our guys have hand-picked, because we believe in the products and the people who manufacture them. We also have our own manufacturing team, which gives us other options as well.*

*“People want choice. I have worked for a branded company, and we can offer that. However, we can also offer an alternative, because sometimes you find yourself trying to fit a square peg into a round hole as far as the outcomes might be for that equipment, software and technology.*

*“With the options we can put forward, I believe our clients end up arriving at a sensible, commercial, hard-working low-maintenance package for their farm.”*



Rick Boyes' employees saved \$330,000 on a new 24-a-side swingover herringbone after some smart planning with Daviesway.



Once the decision to build is made, the next choice is whether to do it on an existing site, or to break new ground.

## PLANNING THE MOST COMMON MISTAKE

Nico said there is one thing - if it isn't done right - which threatens the success of every dairy build.

*“Planning, planning, and planning. It’s that simple.*

*“It’s a multi-million dollar build. When I go into my client’s homes, I often compliment them on their home, and I ask who built it for them, how long the planning and building took? And, if they had plans drawn up for it? They usually say it was an award-winning builder, yes they had plans, and it took five or six months to complete.*

*“Well, they’re talking about spending four times that amount on their dairy, and you can’t build it off a scribble on the back of a cigarette packet. It’s a big thing, and it starts and ends with the planning.*

*“If that is done correctly, everything can flow along really nicely. And, you don’t have to deal with the budget blowouts, permit blowouts, or when you realise you can’t get power to the farm, or you can’t get a power upgrade. All that pre-planning detail is vital and that’s what I do for people within my role.*

*“Essentially it’s one of the biggest – and most underestimated – parts of any new dairy project. Along with the budget.*

*“When you do the planning, there are no nasty surprises.”*

## WHY PROJECT MANAGEMENT?

Nico said whether Daviesway’s clients can choose to have a project manager or not; it depends on the client and their personal situations.

*“We deal with some farmers who will say, ‘Call me when it’s finished’. Right through to others who have the time, are interested, and who want a more owner/builder hands-on experience, and they are comfortable interpreting the plans.*

*“However, we aren’t professional farmers, and I couldn’t think of doing what they do every day.”*

He said most likely, they are probably only going to build one dairy in their lifetime.

*“If they asked me to run their dairy for a week, it would be interesting to see what they came back to.*

*“If you want to build a dairy and run a farm, I would suggest that something is going to have to give.*

*“In the past, I’ve seen profitability, productivity, breeding programmes and cow health that have gone wrong because it just doesn’t work to run a farm and project manage a dairy build simultaneously.*

*“The guys who want to be involved and be hands on can still do that, but I’d always advise them to make sure they have the right people around them, so things still get done on the farm.”*



When the dairy is completed, Daviesway remains in the picture long after the commissioning has been completed.



With a plan, the contractors have a detailed script to follow.



Next to the cow and the operator the milking cluster (or milking liner) is the next most important thing in the dairy, according to Nico Polato.

## MECHANICAL, ELECTRICAL AND PLUMBING

A full set of technical specifications surrounding the mechanical, electrical and plumbing areas are completed before the first shovel breaks ground.

*“In the plumbing there are eight different sections – commercial, industrial, trade-place, effluent, draining, hot and cold licence plumbing, and septic systems.*

*“The plan will show, for example, a two-dimensional view of where the toilet is. Part of my job is to detail every electrical point, underground point, pre-concrete and post-concrete points, mechanical and electrical points.*

*“It’s so the contractors have a script to follow, and we can ensure that those milestones are met at the critical points and times, and nothing is missed.”*

## BIGGER NOT ALWAYS BETTER

Nico said his focus is to get top quality milk into the vat out of cows that are comfortable in the dairy. Perhaps surprisingly, sometimes that involves choosing a smaller, rather than a bigger, dairy.

*“The bigger they are, the faster they turn, and the less time you have to deal with the cows. There are a whole host of factors that come into play when we talk about dairy size.*

*“Because you can run a brand new dairy, and still not get great results. I’ve seen many 60-stand rotary dairies outperformed by their 50-stand counterparts.*

*“A new dairy’s purpose is to provide a first-class facility for the animal and the operators.*

*“We’re aiming for a cool, calm environment for those cows. So, that as soon as they step onto the platform they are dealing with oxytocin, not adrenaline.”*

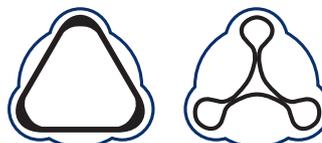
## TWO MOST CRITICAL THINGS

Nico said achieving that also includes management, so dairies are getting the most out of the technology at the ground level.

*“We recommend SOPs [Standard Operating Procedures], and we put up laminated wall charts for the operation of the equipment. And our technicians are always promoting best practice in the dairy, and looking at the triggers and points to watch for.*

*“For example, recommending that the cups-on operator stands four to six positions around from where the cows step onto the platform, so their grain drops before the cups go on, and they immediately let their milk down.”*

Nico said one of the things he does recommend is Milkrite liners. He first saw the technology in the 1970s, and believes Milkrite has refined the triangular moulded plastic shell to a game-changing standard. It features a revolutionary mouthpiece-vented triangular liner, which introduces air above the milk-flow. It stops splash-back and makes cluster removal gentler.

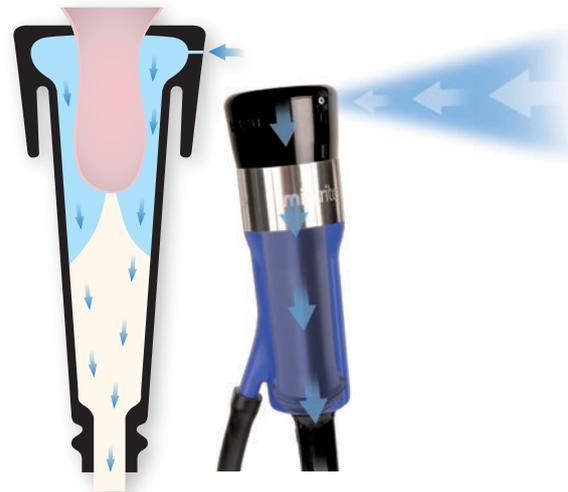


Gentle three-sided massage of the teat during milking process

Teamed with the appropriate pulsation, Nico said it has been an incredible step forward for the industry.

*“The liner is the most important thing in the dairy – next to the cow and operator,”* Nico said. *“All the rest of the equipment is simply milk-path transport equipment.*

*“We’ve seen the net results of this technology on so many farms in Australia, and around the world, and they speak for themselves. The improved teat condition, lowered SCC [somatic cell count] results, calm cows, less cup slippages ... and the list goes on.”*



## MILKRITE – MOUTHPIECE VENTED TRIANGULAR LINERS

- Air enters the system through a calibrated air vent in the liner mouthpiece above the milk
- Smooth efficient airflow eliminates milk reflux and forces the milk in one direction away from teat end
- No cross-contamination = less mastitis & lower SCC

## OPTIMUM TIME MILKING

Nico said most dairy farmers are gunning to spend no more than two hours in their dairy at both ends of the day.

*“People are looking to get in and get out, and to make it a pleasant experience for the operators and the cows. And, yes, generally two hours is what people are looking at. Depending on herd size and numbers – in a lot of cases – that’s what it ends up being.”*

*“However, I don’t look at how many cows you’re going to milk per hour. For me, it comes down to how many litres per hour you’re putting in your bulk milk tank.”*

*“That’s because it comes down to how comfortable the animals are in the dairy, how quickly, and how well they are milking out.”*

*“All dairies have cows that are all sizes, temperaments, and different stages of lactation. You’ve got to have things set up for the average. Some people focus on the minority rather than the majority during the planning stages – and avoiding that comes down to training and awareness.”*

## AFTER-SALES SERVICE

Daviesway works with a number of talented sub-contractors and service teams around the country, which means the owners of new dairies are assured of full support long after the last piece of the new build has been completed.

*“Our service technicians are generally the guys who will also commission the dairy. We usually have four to five working days commissioning, static and wet testing a dairy, which includes testing every system in the plant.”*

*“Then it comes down to the dynamic testing, when we put cows through. We’re there for typically eight milkings – morning and night. Funnily enough, during the commissioning phase we often find the cows settle in better than the humans.”*

*“We automate a lot of the basic functions nowadays. But, there are still little things that go wrong. Mostly it’s just reinforcing the training you’ve given the operators, because it can be understandably very overwhelming for them in the first few days.”*

Nico warns that milking isn’t a race.

*“We’re building a dairy to do the best possible thing by your cows and your operators.”*

## DETERGENTS ORGANIC

Daviesway’s Specialist Dairy Projects manager Nico Polato said it’s been another step forward that Daviesway’s sister company DASCO is the first Australian company to offer an organic certified range of dairy cleaning chemicals and teat dips/sprays.

He says it’s an important part of the puzzle when it comes to the dairy industry’s sustainable future, and recommends dairies making the move.

The range includes rinse aids, alkalis, acids and teat-sanitation products that all meet the requirements for use on organic dairy farms, including for the National Association for Sustainable Agriculture Australia (NASAA) Certified Organic (3071M).

The products are all non-GMO, don’t contain palm oil and are not detrimental to the farm.

### Products included in DASCO’s range include:

**Alka-Rinse** – Post-milking rinse additive

**Eliminate** – Liquid acid

**Rev Wash** – Liquid alkali

**Redene RTU** – Gold standard in Ready-to-Use Iodine teat spray

**Redene** – Original Iodine teat spray

**Pronto** – Electrolytes with energy boost and Vitamin C



Daviesway’s Warragul branch manager Greg Lechte (right) checks in on a new dairy. Greg has been with Daviesway for 18 years.



## BUILDING FOR THE RIGHT REASONS GETS THE RIGHT RESULT



The new dairy has saved milking staff five hours a day, and an additional person in the dairy.



Rod and Jess Warren had the complete picture in mind when they mobilised their dairy build.

### Rod and Jess Warren had the perfect storm to build a new 60-stand rotary.

The young couple was milking 950 cows through a 30-bail swingover herringbone at Winnindoo, Victoria, on 1200 acres (486 hectares). With 696 acres (282ha) dedicated to the milking platform, they had two herds split by an autumn and spring-calving pattern, and it was taking three staff 13 hours a day to milk.

A partial upgrade in 2015 – completed by Daviesway – was done with the intention of re-purposing much of the infrastructure if and when they decided to build new. That upgrade included new automatic cup removers, a new vacuum pump, milk pump, clusters, pulsators at a total investment of \$120,000.

## WATERSHED MOMENT

Roll on 2020, and this was the watershed moment when Rod and Jess decided it was time to take their dairy to the next level.

Aged 35 and 34 respectively, they knew they were in the business for the long haul. And, Rod said they either needed to reduce the herd size ... or change the dairy.

*"It was a band-aid we had to rip off at some point,"* Rod said.

*"We figured with the milk price and everything the way it was, that it was probably time. We had the cows already, so we didn't have to go and buy cows."*

*"It was just the right time for us to build new."*

## LONG TERM DRIVES DECISIONS

They considered a number of options, including building on the old site where the herringbone was already sitting.

However, after consulting with Daviesway's Dairy Specialist Project Manager Nico Polato, they decided to break new ground on a greenfield site.

Rod said, "It wasn't a decision based on the fact that we wanted, 'a shiny new dairy'. We'd done a fair bit of homework about how we were going to pay for it, and it got to the point where it made more sense to build a new dairy than to continue in the old one.

*"What we were doing [to that point] was unsustainable."*

## AFTER-SALES SERVICE HELPED

Rod said Daviesway's performance on their 2017 upgrade helped them secure the 2020 job.



Attention to detail, knowledge, and flexibility was important for Rod Warren.

*"Daviesway had done well there, and the after-sales services was solid. They didn't just throw the new gear in and leave."*

*"They seemed to have that bit of attention to detail where they got everything right before they left. That was partly why I was keen to go with Daviesway again, although I guess it also came down a little bit to price."*

*"They weren't the cheapest, but they were competitive."*

Rod said importantly, Daviesway also came with Nico's knowledge. While Rod was comfortable to manage the project, he was more comfortable in the role having Nico's experience and advice on-hand when he needed it.

*"Daviesway had the support, contacts and experience with Nico involved,"* Rod said. *"They led me in the right direction with all that. Nico's knowledge building dairies is unquestioned."*

*"We're dairy farmers, not dairy builders – and you really only hope to build one dairy in your life. That's probably enough. And, you need to get it right."*



Rod Warren loves that the automatic teat spray wand "never has a hangover on a Sunday morning."

Nico said Rod had the ability to manage the project, and he was happy to be on-call for support.

*"Rod's young, he's a smart, go-getter, and he had a passion and a vision. He'd brought the farm from 100 cows to 950. He wasn't going to stop."*

Nico emphasised the importance of having the right people around "so things still get done on the farm". Which Rod did.

*"For this change, he got the right people involved, and made measured and intelligent decisions."*

## FLEXIBILITY A STRENGTH

Rod's parents and brother both had rotary dairies, and Rod said he was ready to move away from their herringbone.

*"I just prefer how easy it is to do the AI'ing, heat detection, injecting 7-in-1, salmonella vaccine and pregnancy testing on a rotary platform,"* he said.

Daviesway offered ready-made solutions for the build. They also offered a number of alternative options using some of the world's best brands, including BouMatic, Milkrite, InterPuls and Skellerup.

In addition, Daviesway has its own steel fabrication facility at Warragul in Gippsland. It carries an international reputation, and has been exporting rotary glands for more than five decades.

The variety and flexibility allowed Warren Farms to find the best and most cost-effective result for their operation.

*"You really only hope to build one dairy in your life, and Nico's knowledge is unquestioned."*

*– Rod Warren.*



Cow flow is critical with 950 cows moving through the dairy twice a day.



Rod Warren (left) was supported during the build by Daviesway's Nico Polato.

## PLANT CHOICES

Rod said he was led by Daviesway on their plant recommendations, and he has been happy with the CR-1 Automatic Cup Removers (ACRs), which are driven by wi-fi.

The CR-1 has been jointly designed and manufactured by the Daviesway team and its New Zealand counterparts at MilkTechNZ.

Rod said, *"They have a fair bit of tech in them with the Bluetooth, and you can get them to do all sorts of different things.*

*"They suit our job and rodents are a thing of the past without the wiring. They are a pretty good rigid design, and they seem easy enough to work on. They're not overcomplicated or anything."*

## NO HANGOVERS

They also chose a teat spray wand in another effort to reduce labour.

*"It's better than a backpacker because it turns up on Sunday mornings, it doesn't come with a hangover, and I don't have to listen to it complaining," Rod smiled.*

*"The auto-draft was another big thing. We had none of that in the old dairy. Even this morning, I sorted out a few cows with the auto-draft and it was a piece of cake. I punched the numbers in, turned up after milking, and they were drafted for me.*

*"It sure beats walking along with my clipboard trying to find 50 cows in 900. That was a bit of a job."*

The new dairy has cleared the path to also now focus on lifting production. The herd was averaging 540kg milk solids when they stepped onto the new platform. The auto-ID feed system will further refine and zone in on the higher-production cows that are capable of more.

## LONG-TERM VISION

Rod said he was mindful of costs, and the reasons they decided to make the move now.

*"It's been a decision for our future, because if we're going to stay in the industry for the next 25 years, we couldn't have kept milking 900 cows in that old herringbone.*

*"We kept the new build fairly minimal from a cost perspective. But we're happy that we did opt for the auto-feeding and the auto-drafting.*

*"And, the Guardian auto-wash system was a great decision. We just have to hook the hose up, push the button, and the plant is washing.*

*"So, the guys can go on washing down, and everyone is out of the dairy pretty quickly after that.*

*"But, outside of those things, we didn't push for too many bells and whistles. I looked at the yard blasters, but the backing gate washes the yard within a round yard anyway, and that seems to work pretty well. We don't have too much hosing to do after that.*

*"Our staff are all happy, it's certainly improved our workplace morale and we're out of the dairy in four hours now."*

## SAVING FIVE HOURS A DAY

Rod said the best parts of the new dairy have been saving five hours a day in milking times, getting the cows through comfortably, easing the workload for staff, and achieving more work on-farm during the day.

*"Milking used to be a three-person job, because we needed an additional person setting up fences, and getting the second herd in.*

*"With the new dairy I'm looking forward to it being a two-person job right through, with that second person being able to leave the dairy to get the second herd."*

## CASHFLOW POSITIVE

The build took five months, and Rod looks back on it as a positive experience.

*"All the fellas who worked on it, worked well, and they worked well together.*

*"The product they were installing was high quality, the work was detailed, and everyone did a professional job."*

Now ... he says, it's time for the payback.

*"When we worked it out, we estimated the new dairy should pay for itself in 10 years.*

*"But, even at this stage the repayments should be cash-flow positive because of the increased production and labour-saving efficiencies."*



The new dairy will pay for itself in 10 years, and Rod Warren says the repayments have been cash-flow positive from day one.



Paul (left) and Russel Dawson have worked for Daviesway as dairy technicians for 25 and 20 years respectively.

*“We know each other and we know how we both work, so it’s easy. I can start at one end, and he can start at the other, and we generally meet in the middle.”*

Both say Daviesway has given them the opportunity to remain in the industry they love.

Paul said, *“For me, I’d say the highlight has been getting to travel the country and the world through this job. If I wasn’t working for Daviesway, I don’t think that would have happened.”*

*“A lot of technology has changed, but the basics are still there. We like that it keeps us on our toes, and makes every day different.”*

Russel added, *“I’ve been involved with so many dairies and you think when they’re finished, ‘That’s a nice dairy. I like that dairy’. But the way Daviesway are improving more and more as technology comes through, each dairy is that little bit different.”*

For instance, both were recently involved in a challenging job to convert a 60-stand rotary dairy into a 120-stand rotary for milking goats (see page 10).

### STAFF RETENTION KEY

Daviesway has always had an innate ability to retain quality staff. It’s level-one management team have been with the company for an average of 20 years.

It’s how they conquer difficult builds and find service solutions when there doesn’t appear to be one.

Paul and Russel are part of the Gippsland team, which includes six experienced staff and a fabrication team.

The Western Victoria team includes seven staff, while Tasmania is covered by three staff.

Daviesway’s owner John Davies has always said that its people are No.1, the product is second, and the profit happens organically if they get the first two right.

John said, *“Paul and Russel are a great example of what Daviesway is all about.”*

## BROTHERS IN ARMS

### Paul and Russel Dawson have worked together building and servicing dairies with Daviesway for more than two decades.

The two brothers are an integral part of Daviesway’s success at the coal face. Both fitters and turners by trade, they have been dairy technicians with Daviesway for 25 and 20 years respectively.

The pair has fitted out and serviced dairies throughout Australia, with an international résumé that also includes Indonesia, Thailand and Malaysia. Paul, 49, has worked on dairies in the United States.

Their love for the dairy industry runs thick in their blood. They were reared on their parents’ Warragul dairy farm amongst a family of six siblings. Today, three of the family are fitters and turners. Paul cut his teeth in his trade at the Drouin Butter Factory and a local fish farm before finding his passion in building, retrofitting and servicing dairies.

While Russel, 61, enjoyed milking and dairy farming for 20 years after getting his trade, he had had enough of the juggle between farming and off-farm work after a while, asking Paul if there was any spare work with Daviesway.

Working full-time in the Daviesway’s Warragul workshop for five years, manufacturing and making equipment, Russel sold his dairy farm, making the move and buying a smaller beef property. This allowed him to join Paul fulltime with Daviesway, and so the brothers’ legacy began.

L-R: Paul and Russel Dawson like the change and challenges within the dairy industry, because it makes every day – and every dairy – different.

### LEGACY IN THE DETAIL

The brothers can often be found working together, but in the lead-up to Christmas Paul was on a job at Port Fairy (Western Victoria) and Russel was at Coffs Harbour (NSW North Coast). Both are perfectionists. Both have seen a lot of change within the industry. And both are driven by the same thing.

Paul said, *“It’s always great seeing the dairy go up, and taking a pride in your work. Because every dairy we do, we want to improve on our last one. And, I enjoy going to the different farms, and talking with the farmers.”*

Russel agrees.

*“I like having the opportunity to learn new things, I enjoy the job, and I really enjoy talking to our farmers. Lots of our clients know I have farmed too, so perhaps they find me easy to talk to.”*

### TEAMWORK MAKES THE DREAM WORK

Paul said the pair has always worked well together.





Manager Dan Garrity has managed dairy operations for more than 20 years in Australia and New Zealand. He has enjoyed the transition to goats.

## ROTARY CONVERTED FOR GOATS

**Converting a 60-stand rotary into a 120-stand dairy capable of milking 8000 goats has been a mission grounded in innovation and lateral thinking.**

Australian Livestock Farms took over the dairy operation at Bookaar in South-Western Victoria late in 2019, when the property included just the dairy and two homes.

Today, this multi-million dollar operation near Camperdown is a different animal. It is on track to milk 8000 Saanen goats in three to four years. They are producing infant formula for export. There are four massive sheds already built to each accommodate 1000 goats as the operation evolves. It will be a total mixed ration operation. There are currently 600 goats in-milk, averaging 3.5 litres a day (on a young herd).

### CURIOSITY KILLED THE CAT

The first – and no doubt biggest – challenge was converting the dairy. Not only are they much smaller, they are curious, intelligent, and like to nibble anything. And everything.

Daviesway joined the conversation early, bringing with it a team with big credentials and the ability to craft a bespoke solution.

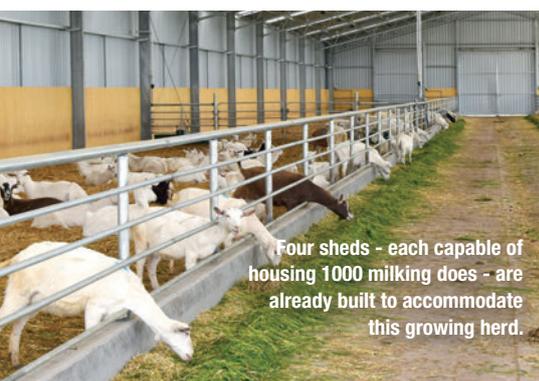
Kiwi Dan Garrity had taken over the operation's management in February 2020 on behalf of the property's owners, well before the dairy was fully commissioned. He has worked alongside the Daviesway team throughout the project.

This is believed to be the first rotary conversion in the world where the goats back out to exit the dairy.

In his former life, Dan milked and managed dairy operations for more than 20 years – including herds of 4000 cows. He had also driven several dairy conversions in New Zealand. Ready for a fresh challenge, he moved from his former address in Tasmania, bringing three of his six long-time employees with him.

*"This year has been the first since 1982 that I haven't milked a cow," Dan said. "I've enjoyed it, and I was at a career juncture. Plus, I'm not the sort of person who is shy about taking on a new challenge."*

*"The goats are like miniature cows to me. They're still ruminants at the end of the day, and they still need similar inputs as far as energy and protein goes, and that's been my approach."*



Four sheds - each capable of housing 1000 milking does - are already built to accommodate this growing herd.



The additional panelling to keep the goats in the yard required more than 10,000 tek screws.

## ENGINEERING KNOW-HOW CREATES SOLUTION

The 60-bail rotary has now been transformed into a working 120-bail goat dairy. Daviesway's Tim Rolling was the man on the ground, driving the works.

*"We did a lot of homework on goat dairies in Europe before we started," Tim said. "It has been a challenge we've embraced – because we knew we could make it work."*

*"At one point, our clients were talking about milking 10,000 goats, and I crunched some numbers around that. We figured out if we had a four-second cluster attachment – with no stoppages – they'd be in the dairy for 19 hours a day. From an engineering point of view, we know we'd need to find a different solution to that. And, that was just the beginning."*

The different sizes of the goats was the challenge when it came to automatic cup removers (ACRs) and automated teat spraying for placement. The auto-draft was also craftily innovated.

### ACRS PERSONALLY FITTED

For the ACRs, Daviesway recommended its CR-1 range; driven by wi-fi, these are gaining significant traction in New Zealand and Australia. The CR-1 has been jointly designed and manufactured by the Daviesway team and its New Zealand counterparts at MilkTechNZ.

In this fit out – with the goats' curiosity and resilience of rodents around dairies – the wireless communication and its meaningful technology were a godsend. Daviesway's manufacturing arm at Warragul was also key in solving many of the modifications within this.

Tim said, *"We'd already done some trials and installations on a smaller-goat scale so we knew the CR-1s could work with some small modifications. We also did a lot of design work with regard to the bail and where everything physically sat. There has been a little bit of trial and error with some stuff."*

*"We also put a lot of effort into making sure everything possible was covered because the goats just nibble on any and everything. We made special shrouds to cover the wiring and hoses – right down to the strings on the ACRs: if they walked out of the dairy and saw the hose, they'd have a nibble at it. They're curious little creatures."*

The automatic teat spray called for some close attention to detail.

Tim said, *"The range between their smallest and their biggest goat is quite broad. So, that made a few challenges for us, in particular with regard to accurate teat spraying. We spent a lot of time watching what was going on, taking measurements and trialling different timing sequences, nozzle positions and different nozzle types. We've now got it to the point that we're satisfied with the way it's performing."*

### KEEPING GOATS IN

Keeping the goats in the yard and encouraging them into the dairy was another engineering feat.

*"We put panelling between each rail. I think we did 900 metres of panelling in the end. My arms and elbows are still rattling, because there would have been roughly 10,000 tek screws involved."*

*"And, the normal-size man holes had to be addressed to. We made up spring-loaded man-hole gates that open from the outside of the yard in; they rest against the post so they can't be opened from the inside. But a person can grab it, and pull it open."*

### MOTIVATED AUTO-DRAFTING

The auto-drafting presented one of the biggest challenges because goats are quick and like to jump. They are all head-locked in on the platform, with no back rail.



This young herd of mainly maiden does is averaging 3.5 litres a day.



Goats are held on the platform by a head-lock with no back rail, and this dairy is believed to be the first where the goats have to reverse to exit.

Tim said, *"The auto-draft systems I've seen overseas have the goats entering a tunnel where they can't jump, or go left or right. What we ended up doing, is not electronically identifying the goats in the dairy. We instead developed a system which identified the bail the goat was in."*

*"And, through a three-touch screen pad the milkers can enter the bail number of the goat they want drafted. We also extended the bridge at the cups off area by five to six bails – the goats are usually milked out by a quarter of the way around – and that gave us two exit points. So if they are being drafted, they get to the first bridge and a ram comes down into the bail, unlocks that goat, and a motivator, which is in the next bail (with compressed air and streamers) shoos them off. That has been quite a unique development."*

*"Because the drafting system works so well, when they have a mob of goats about to kid, they'll run them down to the dairy now to sort them out and put them on the platform and give them some lead feed. It's so much easier on their staff and animals."*

The backing gate has also been re-purposed. Now, it not only moves up and down the yard, it also lifts up, so they can bring in 500 goats at a time, milk them, and bring another herd in behind the gate, lift it, roll it back, and bring it down."



The goats are intelligent, curious, and they like to nibble everything. It meant that special shrouds had to be manufactured to cover any wiring and hoses - right down to the strings on the ACRs.



Instead of the auto-drafting system identifying the goats in the dairy, it has been developed to instead identify the bail the goat is in.

## KIDS ARE INTENSIVE

He said the biggest surprise has been the kidding. Although the does did kid easily, the decision to hand-rear kids on milk powder for goats wasn't a walk in the park.

*"It's so much more labour intensive, and a lot different to calves. Once they are up and going, they're great. But when they are newborns you have to sit with them and feed them with baby bottles. At our peak, we employed 13 ladies in one night through an ad on Facebook once we realised what we were up against."*

*"We peaked at 80 kids being born a day this spring, but next year that could be 200, and the year after that 2000."*

The kids graduate to an automatic feeder, and are weaned at 30-35 days. Dan says they grow incredibly quickly.

A goat's gestation is five months; they plan to split kid next year with the mature aged goats kidding first, following by the younger does. Mature milking goats weigh between 90 and 100kg.

The operation will also invest heavily in AI to progress the genetics and the production. It has to be done microscopically.

## COMMUNITY INTEREST

Dan said the community interest had been welcome, and he is looking forward to the next phase of Australian Livestock Farms' development.

*"What we're doing here is a little different, so it catches people's eye and it intrigues them. That's a good thing. We want to employ locally."*

*"It's important to me to be part of the community, so it's good that the community is curious."*

He said he won't be reverting to dairy cows anytime soon.

*"Having been a career dairy farmer all my life, I wish I'd switched to goats a lot earlier."*

*"We get a good return for our product, and the goats are enjoyable to handle. In fact, most of my team, who have followed me from Tasmania all agree that they find it more enjoyable milking a goat than a cow."*

## IT'S GOT TO BE GOOD

Australian Livestock Farms also opted for the installation of HALO – state-of-the-art hardware and software that can monitor a host of areas via sensors connected to a data hub. The New Zealand technology, which is distributed by Daviesway, monitors activities, stores data and alerts farmers via SMS to their mobile phone if there's a fault.

*"At the moment we're measuring milk temperature, and the valve on the front of the vat to make sure it's closed or open,"* Tim said.

*"Down the track we will expand that to the grain silos, the water troughs in the barns to make sure there is no blocked nozzles or pumps going down. There is a whole array of things to tap into there. And, we can add modules as we go, and they become relevant."*

## SUB-CONTRACTORS VITAL

Tim said his sub-contractors had to be flexible, and open to new ideas.

*"I engaged people that I've worked with before, and who I know are very particular with the way they conduct their work."*

*"They did a fantastic job with the wiring, because there was a lot of automation in this dairy, and a lot of cabling. Everything lined up perfectly."*

The dairy was painted with a plastic-based paint, which was handled by a special contractor, for a clean finish which resembles a factory.

*"They wanted it very, very clean. We have also used black bitumen paint around the posts, the platform and out in the yard to eliminate rusting."*

*Tim said it's particularly clean, with "typically no hoses running during milking".*

The milk hits the vat at four degrees and two of the four compressors on the old vat were decommissioned. They turned the third off, and the remaining one carries the load. The pre-cooling system is done through the tank water and the warm pre-cool water will no longer return to the tank once the goats are housed. It will instead be diverted to the

goats' accommodation because there are associated health benefits for them drinking tepid water.

*"We have also attached a heat recovery system. The chiller system creates heat and we use that heat to pre-heat their hot water in the dairy. It stores 1000 litres of hot water, they use for the plant wash. And, it will save them quite a lot of money in power over the journey."*

*The addition of a Boumatic blower vacuum pump with a variable speed drive will save the operation 33% on its power bill.*

*Tim said now that the dairy is up and running, he can move to the next project.*

*"We haven't had a lot to do with goats before and, it's been quite unique in the way that we've worked. But that's what Daviesway does. We helped them build their dairy, their way."*

## "DAN, THE GOAT MAN"

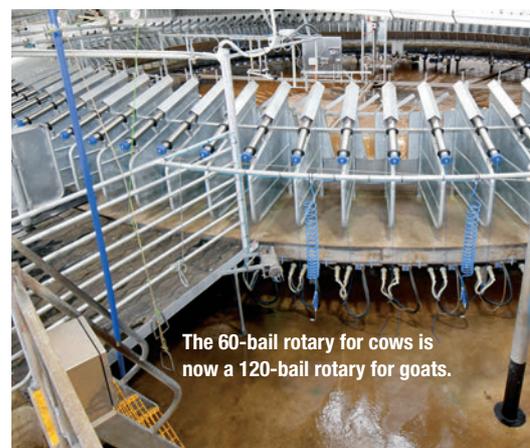
For Dan, who now carries the local nickname, "Dan, the goat man", he says having traversed their first kidding, they are happy.

*"It's been good. Because it's a new project and it's the only cow rotary conversion project milking goats in Australia there was a lot of learning for us, and for Daviesway."*

*"A lot of the software is designed for cows, so it needed to be transitioned over. That's taken a little bit of doing, but we're there now. We're happy with what we've got."*

Now Dan can concentrate on building numbers and production and adjusting to his new life. He has 12 fulltime staff working under him.

A Guardian auto-wash system makes wash-down simple.



The 60-bail rotary for cows is now a 120-bail rotary for goats.

# Finding the best solutions...

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**OLD**

STORCH – SWING-OVER DAIRY



**NEW**

Richard Storch has saved over an hour a day in the dairy, and \$60,000 on his herringbone upgrade at Bordertown, South Australia.



MILKRITE –  
MOUTHPIECE VENTED  
TRIANGULAR LINERS

## CHANGES INCLUDED:

- New Impulse claws with Milkrite vented triangular liners
- New Flo-Tek MR-1 clip-in jettors
- New Daviesway electronic pulsators driven off the cluster remover
- CR-1 ACR cluster removers
- New blower vacuum system installed with a variable speed drive
- A new second milk pump installed to handle the larger volumes of milk
- Upgraded the milk line, receiver, milk delivery, milk filter and plate cooler
- Repairs to the existing bailing system brought it up to current specifications

Richard Storch changed his initial thoughts – and saved \$60,000 – after involving Daviesway in his dairy upgrade.

Richard milks 400 cows on irrigated pastures south of Bordertown in South Australia. He initially planned to extend the 16-year-old herringbone from a 20 to a 30-unit swingover.

However, the Daviesway team noted three things that changed the conversation for them.

1. The milking pit was a good width.
2. The main part of the shed was in excellent condition.
3. The shed and other infrastructure was in good condition (considering its workload).

Daviesway's Bruce Treble said they completed the proposal for the 30-unit swingover, as requested. However, they also prepared a counter proposal for a 20-unit double-up.

*"By doubling up the milking machines, it meant nothing had to be done to the shed, the existing Dairy King bailing, or the Dairy King feed system,"* Bruce said.

*"And, it would reduce the impact on milkings during the build. The 30-unit would have required us to extend the bailing, feeding and milking machines."*

*"We also believed – after looking at the numbers – that the 20-unit double-up would have a slightly better throughput than the 30-unit swingover."*

Richard agreed. Agri Dairies, from Mt Gambier, completed the upgrade within two weeks.

*"As soon as Bruce got out of his vehicle in tradie shorts with a tape measure in his hand after driving five hours to get here, I felt totally comfortable,"* Richard said. *"He essentially got the job for Daviesway, and Agri Dairies were fantastic on the build."*

During the consultation process, Richard mentioned the cows were exiting the dairy slowly.

The team noted that a piece of concrete reinforcing mesh had been bolted to the concrete in the exit to stop cows slipping.

*"This isn't the first time we've seen this, and we suggested a better option would be rubber matting in that exit area, which was adding during the install,"* Bruce said.

The first night's milking was more than 30 minutes shorter, the dairy was quieter (because of the new pulsation and vacuum system), and the cows exited faster.

Richard summaries, *"When we built this dairy 16 years ago, we were prepared to do the 30-unit swingover in time. But this is a better result. I'm really happy with everything."*



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