Sustainable Engineering Solutions

Presented By Pat Walsh – Reliance - 23/09/2025

Supporting Manufacturing NI

- An essential technical supply partner of engineering components.
- 5 Locations, Largest Stock Holding, In-House Application Engineers
- USP – Engineering, Automation, Sustainability & Services
- We strive to improve efficiency, reliability & provide Savings
- Vision – **To Add Value to our Customer Partnerships**
- 24/7-365 support

"Hi Lads, Just a quick comment to say thanks for the service last weekend. It's rare that we would reach out for help like we did last weekend but to know that a local company is backing local industry 24/7 is incredible. We here are very grateful to all the staff and employees of Reliance."

Regards, Dave Mac Sweeney, Boston Scientific

ISO 9001 2015 CERTIFIED

RELIANCE

MANAGED TECHNICAL PROCUREMENT

DONGHUA

SUSTAINABLE ENGINEERING SOLUTION

INDUSTRIAL AUTOMATION

Bonfiglioli

FUCHS

CONDITION MONITORING

FAG

INA

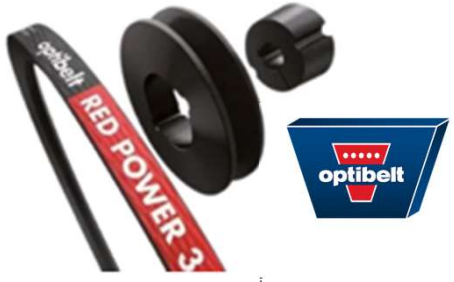
FYH

INVERTEK DRIVES

KTR

TEC

SMC



CLEAN-GEARTECH

Reliance Automation

Innovative Automation Technologies

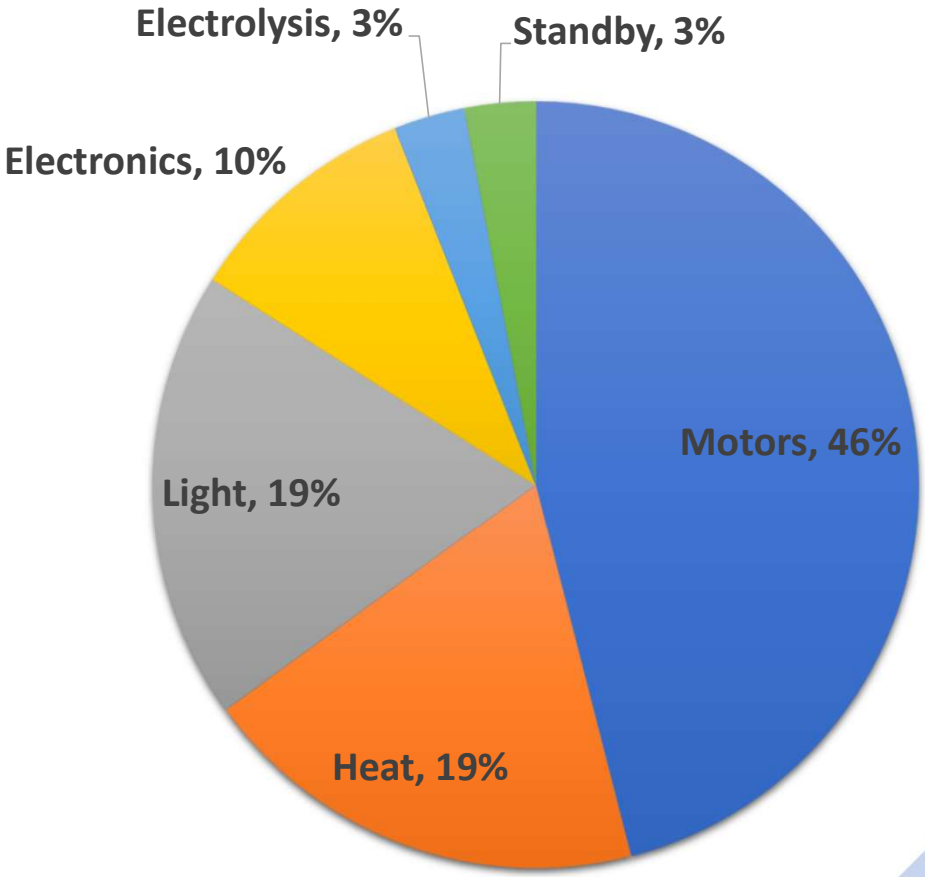
Integrating Automation & Innovation To Drive Your Industry Forward.

Developing intelligent, tailor-made robotic solutions designed to improve quality, efficiency, and competitiveness to enable businesses to quickly unlock the benefits of automation.

From Idea to Implementation…
We Design, Build and Commission Automation Solutions that will Deliver.

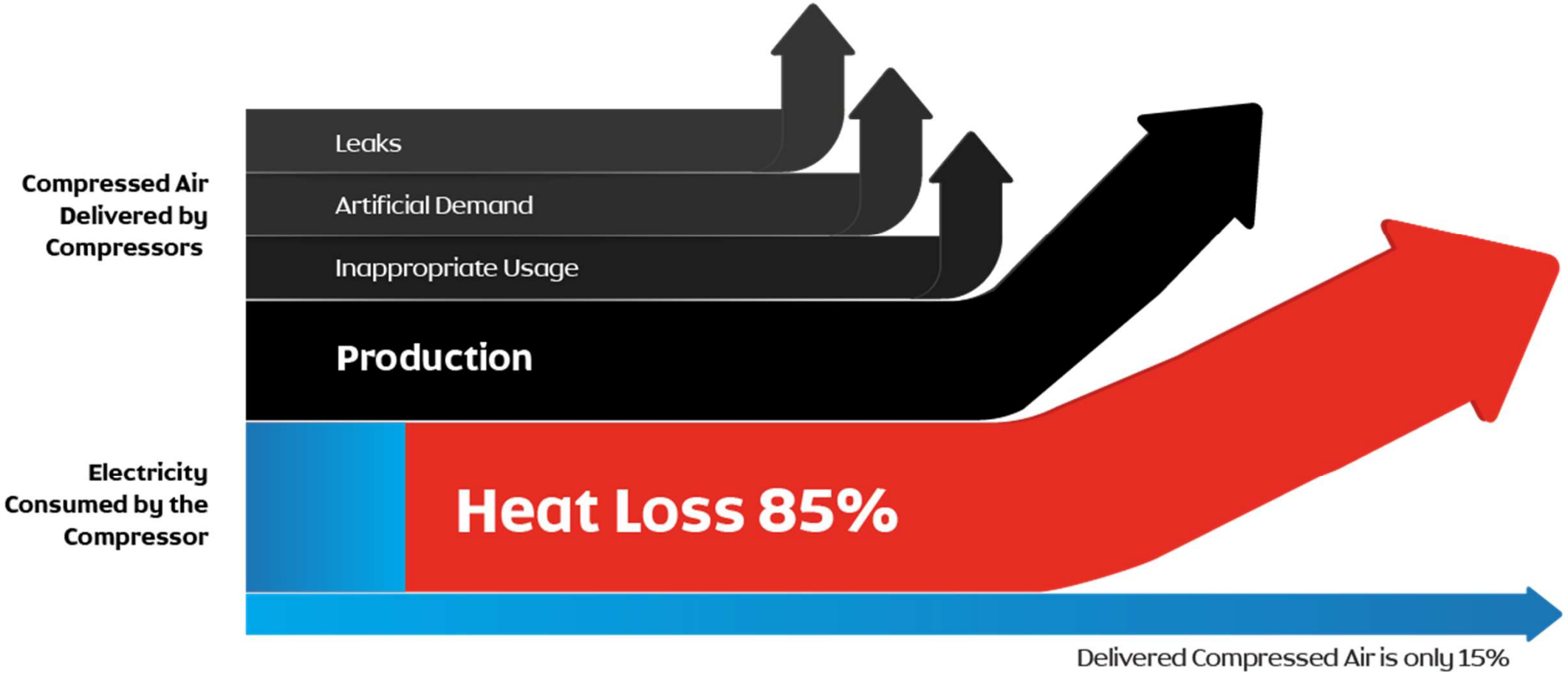
DESIGN. BUILD. AUTOMATE.

Global Electricity Consumption

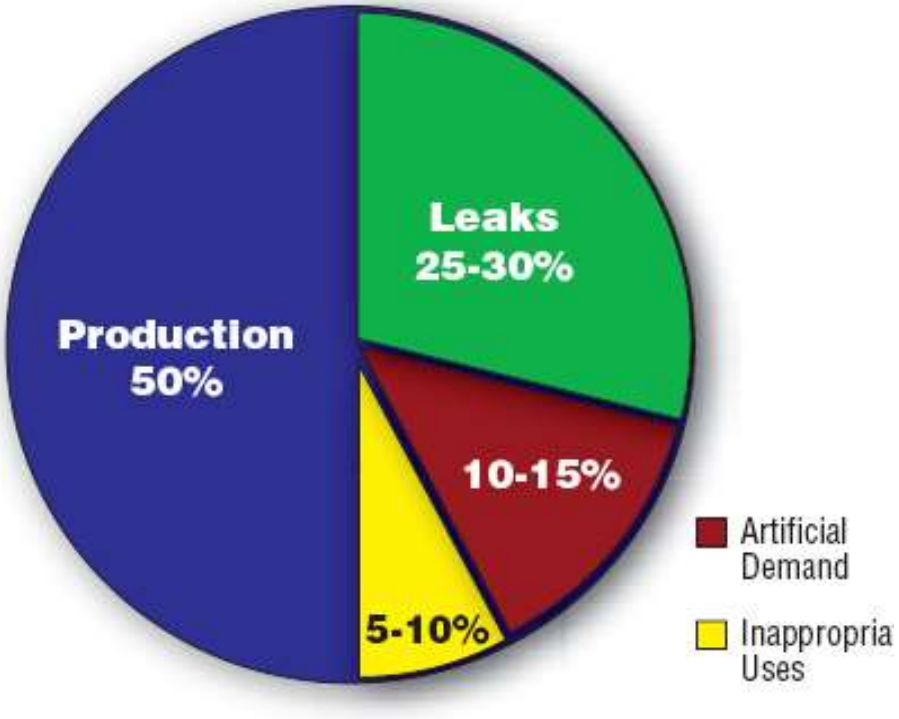


Reliance – Supporting Manufacturing NI 24/7

Are you aware that pneumatic systems waste up to 85% of energy and are only 10% -15% efficient?



Air Leaks: A Hidden Cost – Up to 50% Energy Wasted



- The U.S. DOE estimates that air compressors use as much as 10% of all electricity generated in the United States.
- DOE calculates that as much as 50% of this energy is wasted.
- Compressed air leaks alone account for 25-30% of compressed air use.
- A non- audible leak costs approx. €530 per annum

Identify Air Leaks: – A Hidden Cost!


RELIANCE
100

RELIANCE

eco OPTIDRIVE™

Eco Building Services
Product Overview

0.75kW – 250kW / 1HP – 350HP
200 – 600V Single & 3 Phase Input

IP20 **IP66** **IP55**

Reliance – Supporting Manufacturing NI 24/7

Reduced Harmonic Distortion (THDI)
- Meets EN 61000-3-12 without external equipment

Higher Input Power Factor

PW1

Ratio of Working Power (KW) to Apparent Power (Kilovolt Amperes - kVA)

Improved Efficiency

IE2, IE3, IE4 & IE5 Motor Control

Improved Performance

Dedicated Pump Control Features

Added Flexibility

eco OPTIDRIVE™

PW1 Ratio of Working Power (KW) to Apparent Power （ Kilovolt Amperes - kVA ）

Pat Walsh, 2024-09-10T06:32:16.368

optibelt RED POWER 3

WHY CHOOSE RED POWER?

- **MAINTENANCE-FREE:** Low-stretch cords and transverse fiber blended core eliminate the need for tensioning maintenance.
- **MORE POWER:** Transfers up to 50% more power than conventional belts.
- **MATCHED-SETS:** S=C Plus length tolerances that are much closer than industry accepted matched-set tolerances, regardless of the date manufactured.
- **SHOCK RESISTANT:** The power of aramid cord belts with the capacity to absorb shock loads.
- **INCREASED LIFE:** Dual wrapped to increase durability.
- **GREATER EFFICIENCY:** Up to 97% efficient at transferring power.
- **TEMPERATURE RANGE:** Increased ranges from -40 to 212°F
- **ANTI-STATIC:** Meets ISO 1813 requirements for being anti-static.
- **BACK-BEND:** Flex range accommodates difficult idler stress.

RED POWER 3:

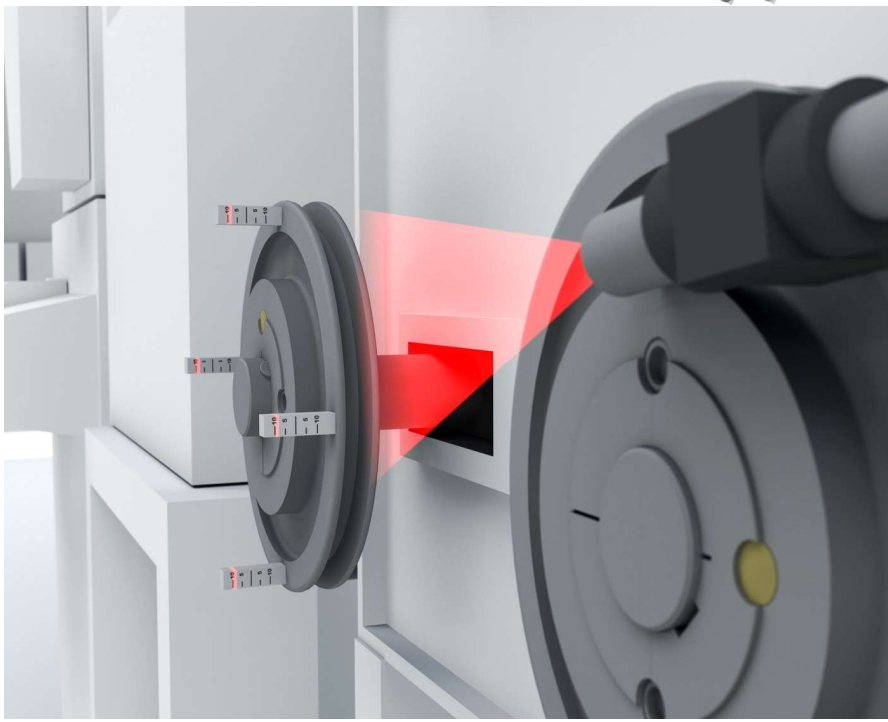
THE FIRST AND ONLY MAINTENANCE-FREE V-BELT

Optibelt Drive Efficiency Technologies

Optibelt Laser Pointer II

Benefits of the optibelt laser pointer II

- Long range
- Accurate projection < 0.5 mrad parallelism to magnet face
- Ability to measure parallel and angular misalignment
- Easy to use alone

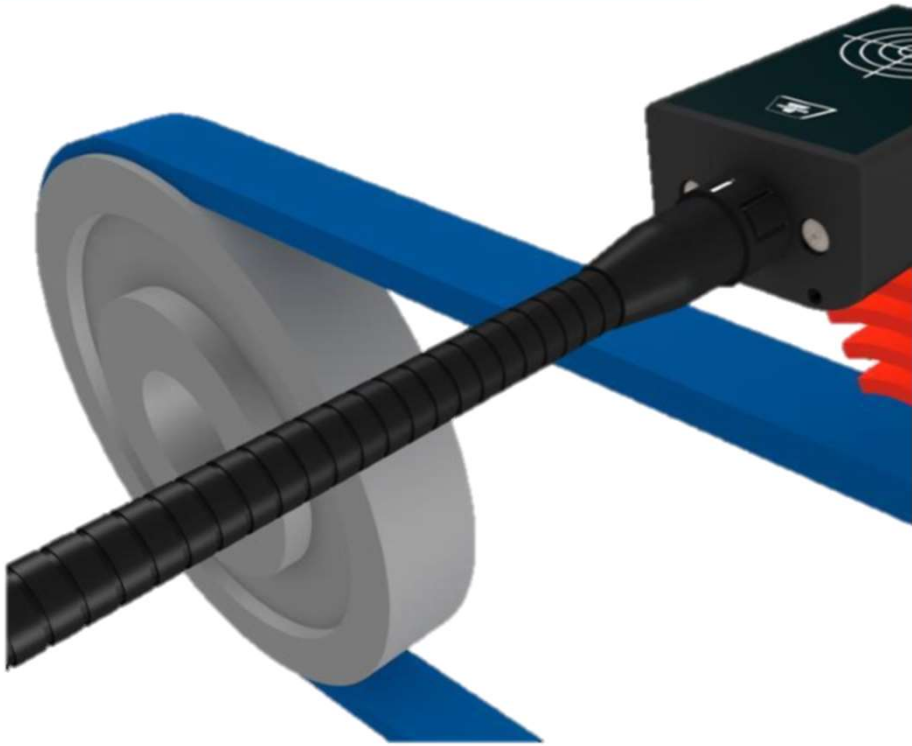


Optibelt Laser Pointer II

EMW FREQUENCY MEASURING METHOD UTILISES THE DOPPLER EFFECT

NOT EFFECTED BY LIGHT

NOT EFFECTED BY SOUND



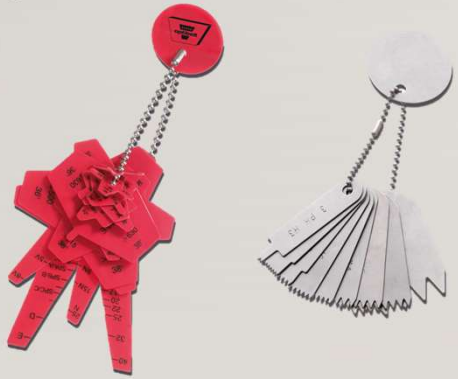
V BELTS – IMPORTANCE OF CORRECT INSTALLATION

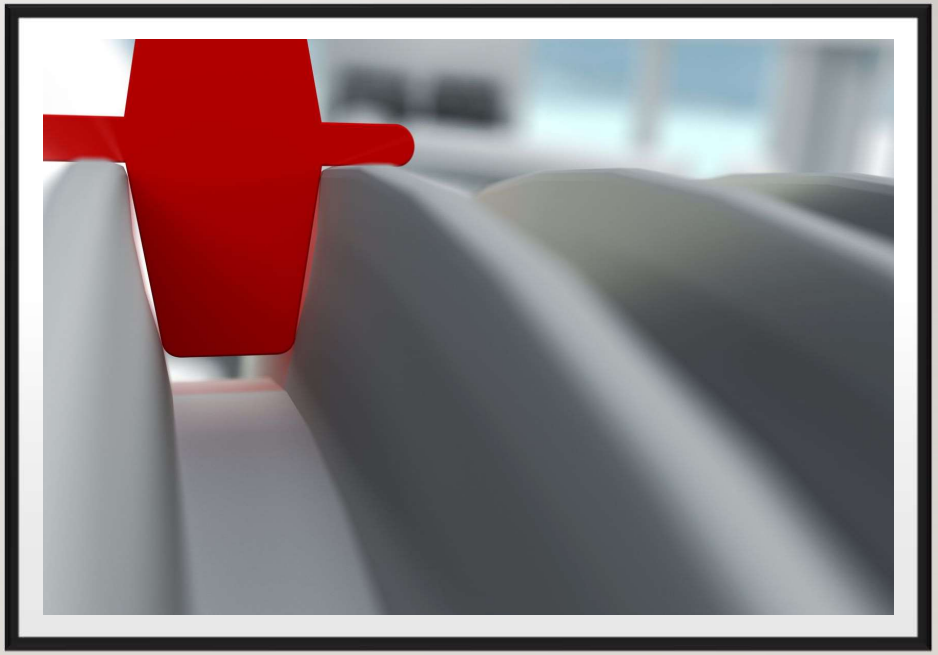
- Design Life of a good quality V-belt is 25,000 hrs (= 3 years 24/7)
- But Typically: 30% of drives only achieve 20% of potential life.
- 70% of drives achieve less than 50% of potential.
- Therefore, significant improvements are possible.
- Optibelt Red-Power V-belts can be 97% efficient
- But Typically, most V-belt drives run at 92% or as low as 82%
- How many Kw/hrs are transmitted by V-belts across your site?
- What does a minimum of 5% of this add up to in energy costs?

Change Perception – Belts are an ASSET not a consumable

V PULLEYS – CHECK PULLEYS

- PULLEY WEAR IS A COMMON CAUSE OF PREMATURE BELT FAILURES AND SLIPPAGE
- EVERY 3RD BELT CHANGE EQUALS PULLEY CHANGE





22KW APPLICATION

Project Name: 22kw example

Currency: € - Euro

Operating Factors

Motor Power (kW)	22
kWh Cost (€)	0.25

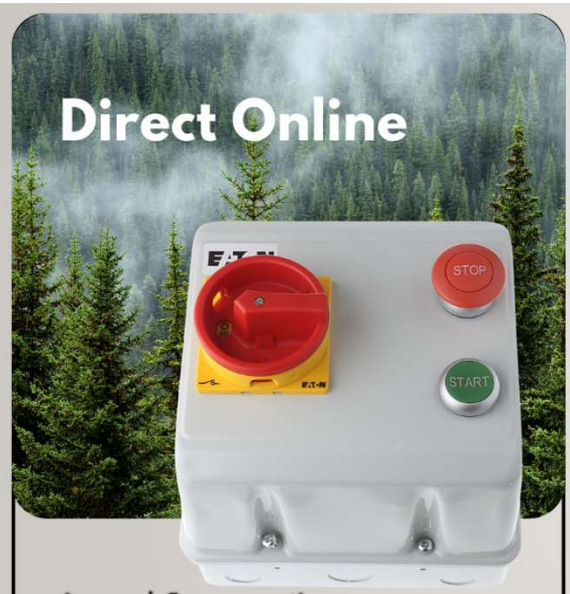
Investment

New Optidrive Cost (€)	2000
Installation Cost (€)	1000

Operating Profile

Hours per day	24
Days per week	6
Weeks per year	50

Direct Online



Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE™	DOL
Energy (kWh)	161568	158400
CO_2 (Tonnes)	69	68
Electricity Cost	40392	39600

Annual Savings

Energy (kWh)	- kWh
CO_2 (Tonnes)	- (Tonnes)
Electricity Cost	- (- / month)

€6486

saved with Optidrive™

Payback period:

6 Months

Inverter Only

Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE™	DOL
Energy (kWh)	130870	156816
CO_2 (Tonnes)	56	67
Electricity Cost	€32718	€39204

Annual Savings

Energy (kWh)	25946 kWh
CO_2 (Tonnes)	11 (Tonnes)
Electricity Cost	€6486 (€541 / month)

€12419

saved with Optidrive™

Payback period:

3 Months

Inverter & RedPower

Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE™	DOL
Energy (kWh)	102390	152064
CO_2 (Tonnes)	44	65
Electricity Cost	€25597	€38016

Annual Savings

Energy (kWh)	49674 kWh
CO_2 (Tonnes)	21 (Tonnes)
Electricity Cost	€12419 (€1035 / month)

75KW APPLICATION

Project Name	75kw example
Currency	€ - Euro

Operating Factors

Motor Power (kW)	75
kWh Cost (€)	0.25

Investment

New Optidrive Cost (€)	10000
Installation Cost (€)	1000

Operating Profile

Hours per day	24
Days per week	6
Weeks per year	50

€n/a
saved with Optidrive™

Payback period:
n/a

Inverter

Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE	DOL
Energy (kWh)	550800	540000
CO_2 (Tonnes)	237	232
Electricity Cost	€137700	€135000

Annual Savings

Energy (kWh)	0 kWh
CO_2 (Tonnes)	n/a (Tonnes)
Electricity Cost	€n/a (€n/a / month)

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€22113
saved with Optidrive™

Payback period:
6 Months

Inverter

Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE	DOL
Energy (kWh)	446148	534600
CO_2 (Tonnes)	192	230
Electricity Cost	€111537	€133650

Annual Savings

Energy (kWh)	88452 kWh
CO_2 (Tonnes)	38 (Tonnes)
Electricity Cost	€22113 (€1843 / month)

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€42336
saved with Optidrive™

Payback period:
3 Months

Inverter & RedPower

Annual Consumption

Consumtion totals, using an OptidriveTM variable frequency drive (VFD) in comparison to Direct-on-line (DOL) motor control with flow regulation based on throttle valves or dampers.

	OPTIDRIVE	DOL
Energy (kWh)	349056	518400
CO_2 (Tonnes)	150	223
Electricity Cost	€87264	€129600

Annual Savings

Energy (kWh)	169344 kWh
CO_2 (Tonnes)	73 (Tonnes)
Electricity Cost	€42336 (€3528 / month)

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Invertek Drives.com
Member of Sumitomo Drive Technologies

Date calculated: 11/09/2025

Project Name: example

Currency: ‹ EU **Electricity cost per kWh:** ‹ 0.25 **Motor rated power:** 22 kW

Operating conditions

Hours per day: 24 Hours **Days per week:** 6 Days **Weeks per year:** 50 Weeks

Operating hours per year: 7200 Hours

Flow profile - operating time (%) at % rated flow:

Time at 30% flow:	0%	**Time at 70% flow:**	0%
Time at 40% flow:	0%	**Time at 80% flow:**	100%
Time at 50% flow:	0%	**Time at 90% flow:**	0%
Time at 60% flow:	0%	**Time at 100% flow:**	0%

Cost of new Optidrive: ‹2000 **Cost of installation:** ‹1000

Total cost of investment: ‹3000

Annual costs

	Original (DOL)	Original (new solution)	Annual savings	Monthly savings
Energy (kWh)	152064	102390	49674	4139
CO_2 (Tonnes)	65	44	21	1
Electricity cost	‹38016	‹25597	‹12419	‹1035

Total cost of investment: ‹3000

Monthly savings: ‹1035

Payback period: 3 Months

Note: *The calculations assume the use of throttle valves or mechanical dampers to achieve the flow profile entered for the DOL values, which provides a small reduction in the energy consumed. This attempts to put a realistic conservative value for the energy saved when using the Optidrive to achieve the same flow profile. If no flow regulation exists in the original application and a flow profile is entered in this calculation, noticeably higher savings than those indicated are very likely to be achieved which will shorten the payback period.*

OUR DRIVE FOR A COOLER PLANET

Invertek Drives.com
Member of Sumitomo Drive Technologies

Date calculated: 11/09/2025

Project Name: example

Currency: ‹ EU **Electricity cost per kWh:** ‹ 0.25 **Motor rated power:** 75 kW

Operating conditions

Hours per day: 24 Hours **Days per week:** 6 Days **Weeks per year:** 50 Weeks

Operating hours per year: 7200 Hours

Flow profile - operating time (%) at % rated flow:

Time at 30% flow:	0%	**Time at 70% flow:**	0%
Time at 40% flow:	0%	**Time at 80% flow:**	100%
Time at 50% flow:	0%	**Time at 90% flow:**	0%
Time at 60% flow:	0%	**Time at 100% flow:**	0%

Cost of new Optidrive: ‹10000 **Cost of installation:** ‹1000

Total cost of investment: ‹11000

Annual costs

	Original (DOL)	Original (new solution)	Annual savings	Monthly savings
Energy (kWh)	518400	349056	169344	14112
CO_2 (Tonnes)	223	150	73	6
Electricity cost	‹129600	‹87264	‹42336	‹3528

Total cost of investment: ‹11000

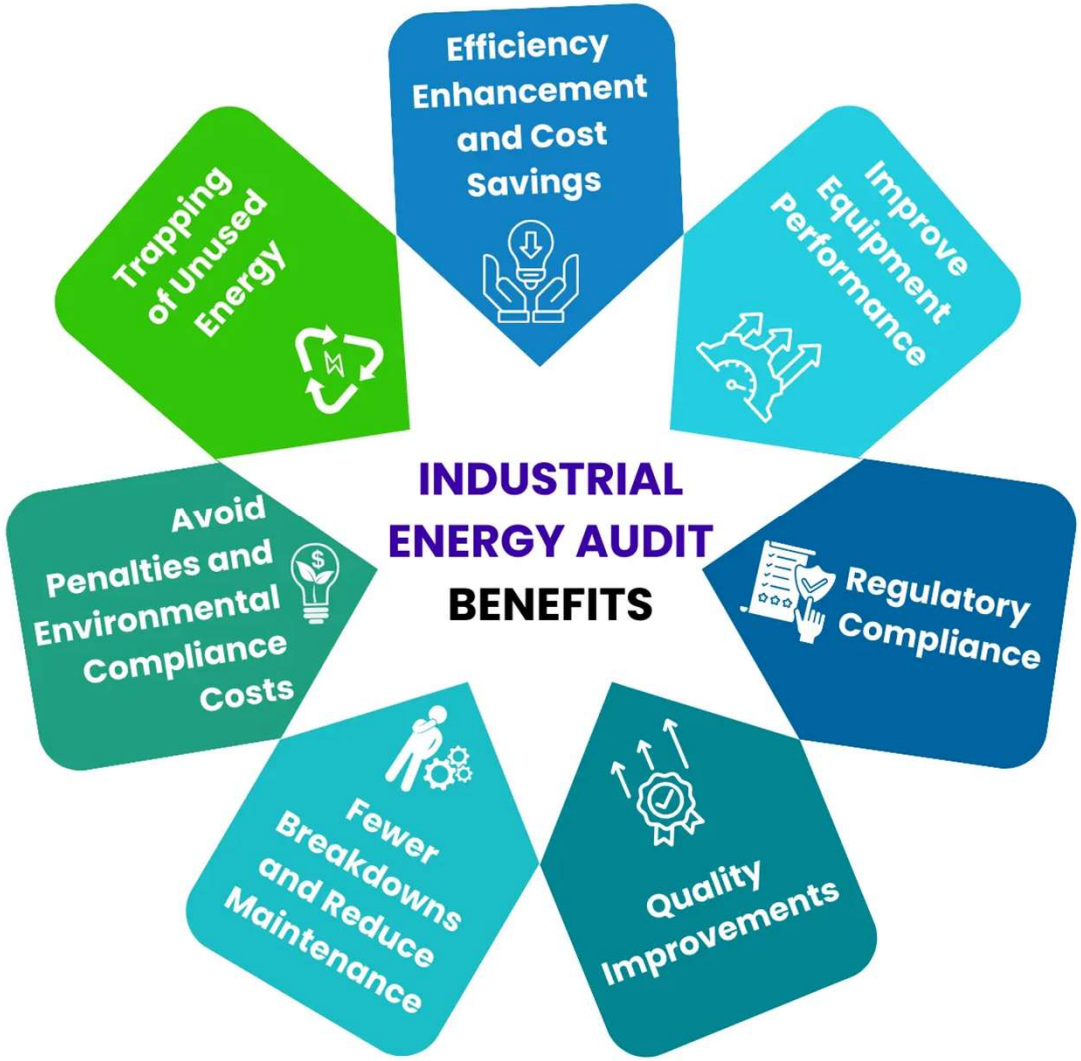
Monthly savings: ‹3528

Payback period: 3 Months

Note: *The calculations assume the use of throttle valves or mechanical dampers to achieve the flow profile entered for the DOL values, which provides a small reduction in the energy consumed. This attempts to put a realistic conservative value for the energy saved when using the Optidrive to achieve the same flow profile. If no flow regulation exists in the original application and a flow profile is entered in this calculation, noticeably higher savings than those indicated are very likely to be achieved which will shorten the payback period.*

OUR DRIVE FOR A COOLER PLANET

Free Energy Audit On Your Applications



Thank You

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