



***LEKTRO***

Electric Towbarless  
Tow Vehicles

- 
1. **LEKTRO** History / Introduction
2. **LEKTRO** Customers
3. **LEKTRO** Benefits
4. **LEKTRO** Operation
5. **LEKTRO** Conclusion

Presentation Outline 2



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***LEKTRO*** developed the world's first Towbarless Tow Tractor in 1967 for Oregon based FBO, Flightcraft.



***LEKTRO*** HISTORY 3

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***LEKTRO*** tugs have been used by commercial airlines worldwide since the mid-1980s





Today ***LEKTRO*** has nearly 5,000 customers worldwide including:

- Private/corporate operators
- FBOs
- Governments/Militaries
- Aircraft OEMs
- Airlines



***LEKTRO*** HISTORY 5



# **LEKTRO** Airline Customers

- Aero Mexico
- ComAir
- Piedmont
- Connect
- Continental
- Pinnacle
- Air Canada
- Express
- Porter
- Air China
- Delta
- Qantas Link
- Air Nelson
- Express Jet
- Qatar Airways
- Air New Zealand
- Horizon
- Shenzhen
- Air Wisconsin
- Island Air
- SkyWest
- America West
- Jazz Air
- Southwest
- American Eagle
- Mesa
- Sun Air
- ANA
- Mesaba
- United
- ASA
- Middle East
- US Airways
- Bar XH
- Perimeter
- West Air

**LEKTRO** Customers 6





# The LEKTRO Benefits:

- Towbarless
- Electric
- Company Reputation

LEKTRO Benefits 7

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# Towbarless Benefits

- **Enhances employee safety**
- **Reduces cost**
- **Eliminates jack-knifing**
- **Better traction**
- **More maneuverable**
- **Gentler on aircraft**

***LEKTRO*** Benefits 8



# Towbarless Benefits

- **Enhances employee safety**
  - **LEKTRO is “wheel chock” while strap/adaptor removed**
  - **Aircraft can’t roll forward hitting employee if brakes inadvertently released**
  - **No back injury handling towbar**
  - **No pinched fingers connecting towbar**

**LEKTRO** Benefits 9

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# Towbarless Benefits

- **Reduces cost**
  - **Easier for operators to learn**
    - **Much easier than pushing with two pivot-point towbar**
    - **New driver can learn LEKTRO in 1/10 the time**
  - **Manpower savings**
    - **Reduces need for person to align/hook-up towbar**
  - **Eliminates towbar expense**
    - **No towbar acquisition cost**
    - **No towbar maintenance cost**
    - **No towbar sheer pin cost**

***LEKTRO*** Benefits<sub>10</sub>



# Towbarless Benefits

- **Eliminates jack-knifing**
  - **One pivot-point**
  - **NLG part of LEKTRO cradle**



**LEKTRO** Benefits <sup>11</sup>



# Towbarless Benefits

- **Better traction due to utilizing NLG weight**
  - **NLG weight transferred onto LEKTRO chassis and drive axle**
  - **Aircraft weight becomes advantage vs. disadvantage**



***LEKTRO*** Benefits<sub>12</sub>



# Towbarless Benefits

- **More maneuverable**
  - **By eliminating towbar extra pivot-point and length, can maneuver in much tighter area than tug/towbar**





# Towbarless Benefits

- **Gentler on aircraft**
  - **No shunting due to slop in towbar/tow hook**
  - **NLG tire on cradle acts as shock absorber**
  - **Smoother push-back experience for passengers**

***LEKTRO*** Benefits<sub>14</sub>



# Electric Power Benefits

- **Lower operating cost**
- **Smoother operation**
- **No weather-impacted performance**
- **Increased safety**
- **Great for public relations**

***LEKTRO*** Benefits<sub>15</sub>



# Electric Power Benefits

- **Lower operating cost**
  - No fuel to buy
  - Only consumes energy when moving
    - Combustion engines left idling
- **Less maintenance**
  - Fewer moving parts and components
  - No tune-ups/oil changes
  - Main task: battery re-charging

**LEKTRO** Benefits<sub>16</sub>

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# Electric Power Benefits

- **Meets emissions mandates**
  - **No fumes**
  - **Use of all-electric LEKTROs may offset need to replace other emission emitting equipment**
  - **All-electric LEKTROs can become standard tow tractor in every state**

***LEKTRO*** Benefits <sub>17</sub>



# Electric Power Benefits

- **Smother operation**
  - **Controlled acceleration**
  - **Higher torque**
  - **No transmission shift points**
- **No weather-impacted performance**
  - **No cold weather starting problems**
  - **No radiator overheating**

***LEKTRO*** Benefits<sub>18</sub>



# Electric Power Benefits

- **Increased safety**
  - **Quiet**
    - **Easier for employees to communicate**
    - **Reduced noise when operating inside hangar**
  - **Employees not exposed to CO emissions**

***LEKTRO*** Benefits<sub>19</sub>



# Electric Power Benefits

- **Great for public relations**
  - Public prefers environmentally conscious companies
  - LEKTRO customers can boast about being “green” companies.

*“...purchases electric towbarless  
push-back tractors”*

***LEKTRO*** Benefits<sub>20</sub>



# Company Reputation

- **Family owned since 1945**
- **Unparalleled customer support**
- **Highest quality components**
- **24/7 free telephone tech support**
- **Accessible upper management**
- **Word you can count on/good as gold**
- **Listen to our customers**
- **Complete customer satisfaction top priority**
- **Still supporting products built 40 years ago**

***LEKTRO*** Benefits<sub>21</sub>



## Summary of **LEKTRO** benefits

- Reduces time and manpower required to handle aircraft
- Provides significant, long-term savings
- Reduces potential for aircraft damage
- Increases employee safety
- Increases hangar density
- Reduces hangar heating/cooling cost
- Eliminates need to purchase/maintain towbars
- Reduces tug maintenance costs
- Enhances public relations

**LEKTRO** Benefits <sub>22</sub>



# LEKTRO Capture

- **Remove NLG front chock**
- **Approach aircraft**
- **Lower cradle**
- **Stop short of aircraft**
- **Attach strap/adapter**
- **Tighten winch strap**
- **Remove remaining chocks/Release Brakes**
- **Winch NLG onto cradle**
- **Raise cradle**
- **Commence push-back**

***LEKTRO*** Operation<sub>23</sub>



















# LEKTRO Release

- **Lower cradle**
- **Set brakes/Place Main Gear Chocks**
- **Release winch tension**
- **Remove strap/adaptor**
- **Slowly back LEKTRO away from aircraft**
- **After NLG off and clear of cradle, raise cradle slightly**
- **Return to parking position**

***LEKTRO*** Operation<sub>28</sub>





Conclusion: Why your company should switch to LEKTRO tow vehicles for your ground handling operations:

- a. LEKTRO Tugs are safer**
- b. LEKTRO Tugs are easier to learn/operate**
- c. LEKTRO Tugs are environmentally friendly**
- d. LEKTRO Tugs save towbar expense**
- e. LEKTRO Tugs are more maneuverable**
- f. LEKTRO Tugs require less maintenance**
- g. LEKTRO Tugs will save money**
- h. LEKTRO has unparalleled reputation in industry**

***LEKTRO*** Conclusion <sub>29</sub>

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***LEKTRO***

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