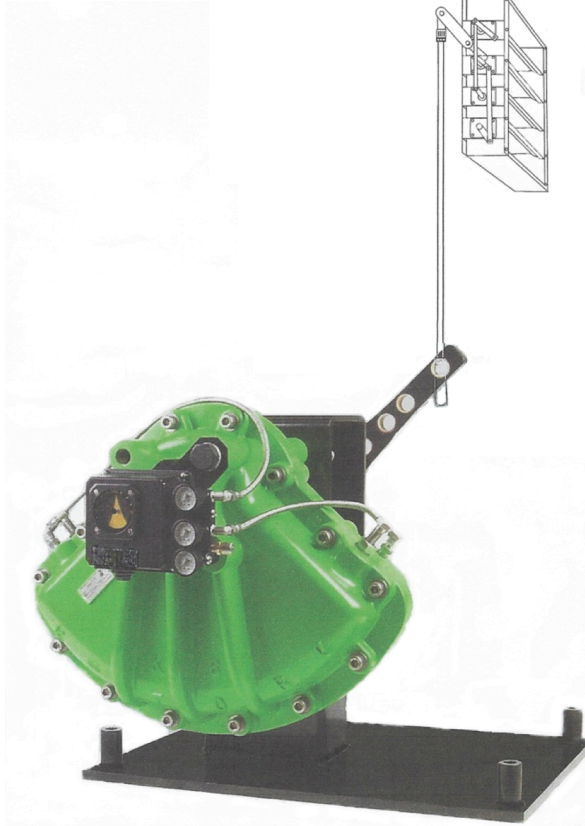


STANDARD-DD

Damper Drives

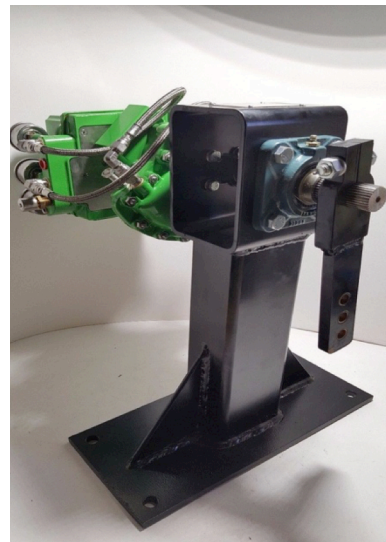


SERIES "FS"
Floorstand Mount Drives

RETROFIT
with ...
STANDARD-DD
Damper
Drives

Your Path to Performance and Peace of Mind

- High Performance Damper Drives for Precision Damper Control
- "Drop in Place" for Easy Retrofit Solutions of Existing Damper Drives
- Wide Range of Torque Ratings available in seven (7) sizes from 90 to 10,416 ft. lbs. (122 to 14,131 Nm)
- Quarter-turn (90 deg.) rotation is standard. Other degrees of rotation are available
- Conventional or Smart Digital Positioner (with HART Communication, Fieldbus or Profibus) options
- Control Options for Fail-Safe or Fail-in-Place on loss of Input Signal or Air Supply
- Wide Range of Options available:
NEMA 4X (IP66) Enclosures, Position Transmitters, Alarm/Travel Limit Switches, Air Failure Lock-up, Air Reservoir for Fail OPEN/CLOSE, Manual Operation shifts easily from Automatic to Manual Control
- Suitable for High Temperature Environments to 300°F (149°C)
- Linear Stroke Cylinder Drives are also available
- *The Right Choice for New Installations.
The Perfect Solution for Retrofit.*



SERIES "FS"

INDUSTRIES:

STANDARD-DD DRIVES ARE DESIGNED FOR THE FOLLOWING INDUSTRIES FOR PRECISE AND RELIABLE POSITIONING OF DAMPERS.

- Electric Power Utilities
- Oil & Gas Refineries
- Chemical/Petrochemical
- Steel, Aluminum and other metals
- Pulp & Paper Mills
- Pharmaceuticals
- Food and Beverage
- Water and Wastewater Treatment
- Co-Generation
- Fluidized Bed Boilers
- Glass Manufacturing
- Cement and Lime



Electric Power Utility



Oil & Gas Refinery



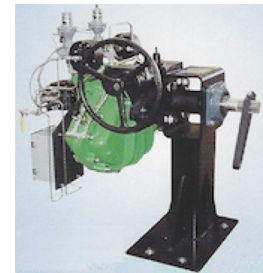
Petrochemical Plant



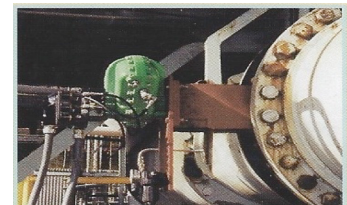
Steel Mill

STANDARD-DD Damper Drive Applications Flow Modulation of Combustion Air and Flue Gas

- Forced Draft (FD) Fan
- Induced Draft (ID) Fan
- Primary Air (PA) Fan
- Gas Recirculating (GR) Fan
- Booster Fan
- Seal Air Fan
- Primary Air to Mills
- Mill Hot Air Control
- Mill Tempering (Cold) Air
- Mill Velocity/Volume Air
- Mill Shut-off
- Mill Burner Shut-off
- Mill Seal Air
- CE Windbox Fuel & Aux Air Dampers
- CE Burner Nozzle Tilt Drives
- SOFA BOX Dampers
- SOFA BOX Nozzle Tilt
- Secondary Air Windbox
- Cyclone Burner Secondary Air
- Cyclone Burner Primary Air
- Air Heater Inlet
- Air Heater Outlet
- Air Heater Bypass
- Superheat Pass Dampers
- Reheat Pass Dampers
- Main Pass Dampers
- Bypass Dampers
- Gas Recirc Tempering
- Gas Recirc Bypass
- Baghouse Cell Isolation
- SCR System Dampers
- Scrubber Module Isolation
- Flop Gate Coal Diverter
- Bottom Ash Hopper
- Fly Ash Handling Systems
- Oxidation System Dampers
- Fluid drive Coupling Control:
F.D., I.D., P.A., G.R. Fans,
Boiler Feed Pumps
- Turbine Governors
- Stoker Speed Control
- Gas Turbine Exhaust Bypass



Floorstand Mount



Mount Direct



Alstom CE Boiler
Windbox. Secondary Air

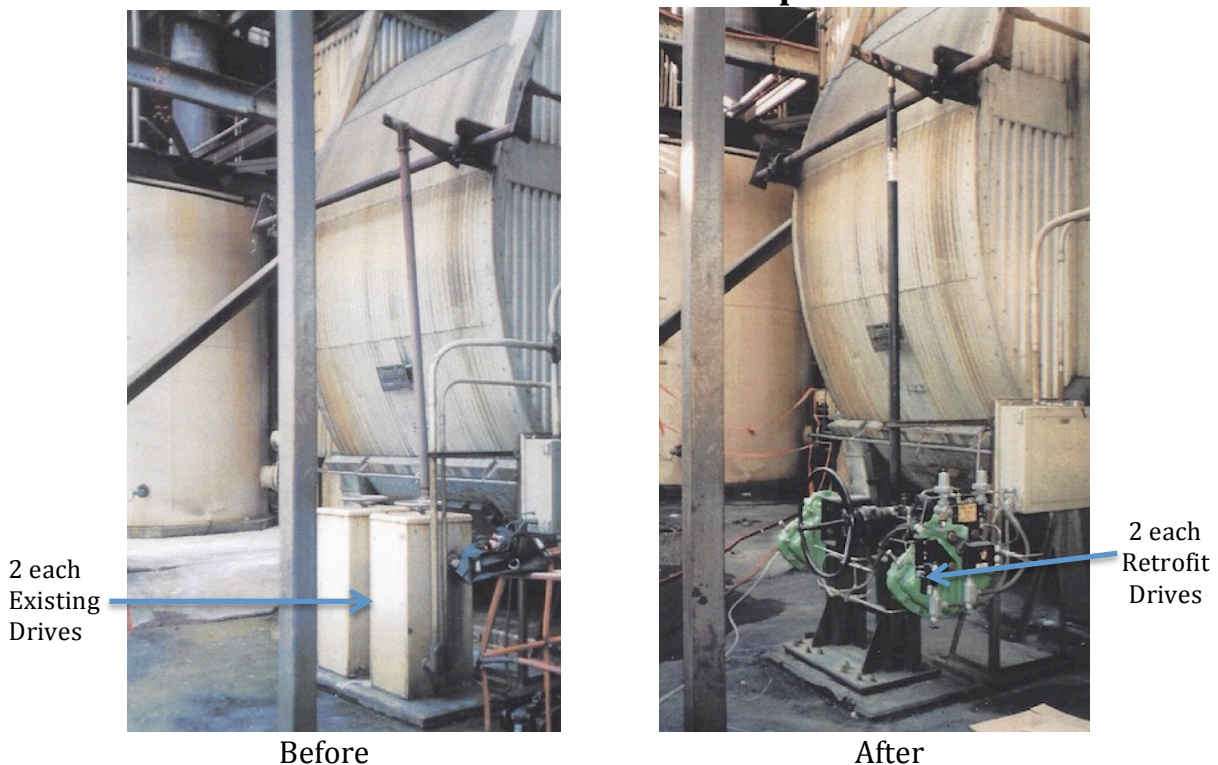
STANDARD-DD High Performance Damper Drives are the solution for Control of Combustion Air and Flue Gas thru a boiler.

STANDARD-DD is dedicated to assist our customers in providing resolutions.

Engineered for precise, accurate, dependable control for a wide variety of damper applications.

- **Rotary vane actuator – one moving part**
Most reliable, efficient actuator design
- **Linear constant torque output for full 90° stroke**
Output torques range from 90 ft. lbs. to 10,416 ft. lbs. (122 to 14,131 Nm)
Master-Slave actuator option provides torque to 20,832 ft. lbs. (28,262 Nm)
- **Compact Rugged Design**
Maximum environmental protection
- **Wide range of input control and feedback options**
Characterizable high-gain positioner with versatile signal conditions to interface with customers existing demand signal and feedback signals
- **Durable corrosion resistant internal and external finish**
- **High immunity to shock and vibration**
- **STANDARD-DD Damper Drives provide 100% duty cycle**
Rated 3600 starts per hour without overheating
- **High speed stroke times of three (3) seconds is available for full damper travel**
- **No internal levers or gearing**
Eliminates dead-band for fast response and sensitive control
- **No dangerous external moving parts**
Safe for operating and maintenance personnel
- **Designed for maintenance-free service**
For operation in harsh high temperature environments up to 300°F (149°C)
- **STANDARD-DD WARRANTY:**
Three (3) years or two (2) million cycles (4 million strokes), whichever occurs first, after date of shipment

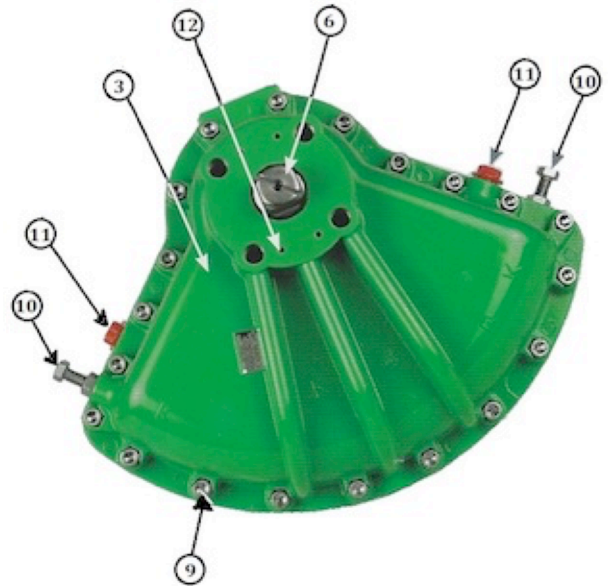
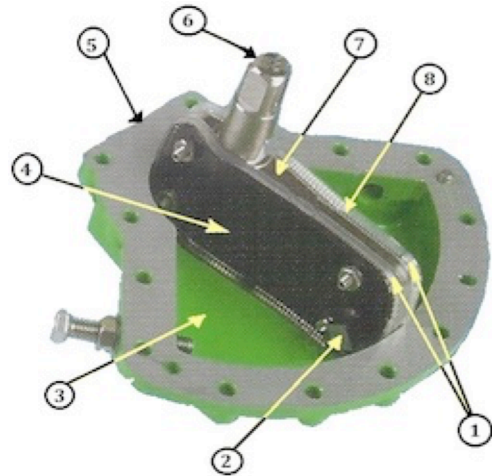
I.D. Fan Radial Vane Inlet Damper Drive



HEART of the STANDARD-DD Drive System – *The Inside Story*

Rotary Vane Actuator is standard. Other actuator types are available.

1. **Dual Opposed Lip Seals**
Provides effective, air-assisted seal for low friction and long, maintenance-free life
2. **Steel Travel Stops**
On both sides of steel vane
3. **Corrosion-Resistant Finish**
Durable TGIC-Polyester Epoxy powder-coat finish inside and outside of actuator surfaces
4. **Steel Side-Plate Seal Retainer**
Located on both sides of steel vane. Provides the strength to assure accurate Open and Close stop positions
5. **Integral Namur Manifold**
For direct-mount solenoid valve, eliminating fittings and tubing
6. **Alloy Steel Drive Shaft**
High tensile output shafts for strength and durability. ENP finish for corrosion-resistance. Wrench Manual Override and Vane Position Indicator
7. **Integral Vane / Shaft Casting**
Cast as a single piece; only one moving part. Eliminates all “slop”, hysteresis or lost motion
8. **Stainless Steel Seal Expanders**
Located on both sides of steel vane. Ensures long-term lip seal-to-case contact. Excellent in both high-cycle and low-cycle applications
9. **Stainless Steel Bolting Hardware**
For long-term corrosion resistance
10. **Bi-directional Travel Stops**
80° to 100° standard adjustments are stainless steel. Extended travel stops available for reduced travel as low as 30° rotation
11. **Large Air Inlet Ports on both sides of Actuator for Fast Operation**
Provides for high-cycle speed of operation with no restrictions
12. **Integral Namur Accessory Mount on outside top of Actuator Surface meets VDI/VDE 3485 accessory mount standards for positioners, limit switches and indicators**



STANDARD-DD DRIVE CONTROL OPTIONS

- **Conventional Positioner**
 - * Standard Linear Cam with square or square root cams available
 - * Input Signals
 - 3-15, 3-27, 6-30 PSI
 - 4-20 mAdc
 - 1 to 5 VDC or 0 to 10 VDC or -10 to +10 VDC
- **Smart “Intelligent” Digital Positioner**
 - * 4-20 mAdc Signal
 - * HART Protocol
 - * Analog/Digital Communications
 - * Microprocessor based
 - * Auto stroke calibration with diagnostics
 - * Configured via local pushbuttons, PC with IBIS software and FSK modem or handheld programmer
 - * Profibus or Foundation Fieldbus
 - * Explosion-Proof Positioner option
 - * Low air bleed 0.0003 SCFM in Null state
 - * Remote Mounted Positioner
 - * CE Conformity
- **Feedback Signals**
 - * 4-20 mAdc Position Feedback
 - * 1K Potentiometer Feedback
- **Adjustable Alarm/Travel Switches**
 - * 2 or 4 SPDT or DPDT Microswitches
 - * Proximity Sensors
- **Failure Modes**
 - * Fail OPEN or CLOSED with Air Reservoir
 - * Hold last position on loss of signal
 - * Hold last position on loss of supply air
- **Electrical Components**
 - * Nema 4X, (IP66) watertight, dust tight
 - * Explosion-proof electrical ratings
- **ON-OFF for Isolation Service**
 - Solenoid Valves, single or dual coil
 - * 120, 240 VAC 60/50 Hz
 - * 24, 125, 250 VDC
- **Manual Override**
 - * Hand lever with locking bolt
 - * Declutchable Gearbox with Handwheel
 - * Pneumatic Regulator
- **Manual Speed Control Valves**
- **Booster Relays for Fast Drive Rotation**
- **Air Failure Alarm Pressure Switch**
- **Combo Particulate/Coalescing Air Filter**
- **Air Pressure Regulator with gauge**

Air Pressure in PSIG (Bar) at the Drive	STANDARD-DD Damper Drive Models						
	Drive Torque Output Ft. Lbs. (Nm)						
	DD-1	DD-2	DD-3	DD-4	DD-5	DD-6	DD-7
40 (2.8)	32 (43)	68 (92)	155 (210)	379 (514)	883 (1198)	1850 (2510)	3958 (5370)
50 (3.4)	41 (56)	87 (118)	200 (271)	483 (655)	1116 (1514)	2358 (3199)	5000 (6784)
60 (4.1)	50 (68)	106 (144)	241 (327)	583 (791)	1341 (1819)	2875 (3901)	6083 (8253)
70 (4.8)	60 (81)	127 (172)	286 (388)	691 (937)	1566 (2125)	3441 (4668)	7208 (9779)
80 (5.5)	70 (95)	148 (201)	330 (448)	800 (1085)	1800 (2442)	4000 (5427)	8333 (11305)
90 (6.2)	80 (109)	168 (228)	373 (506)	900 (1221)	2025 (2747)	4541 (6161)	9291 (12605)
100 (6.9)	90 (122)	190 (258)	416 (564)	1000 (1357)	2250 (3053)	5000 (6784)	10416 (14131)
110 (7.6)	99 (134)	209 (284)	457 (620)	1100 (1492)	2475 (3358)	5500 (7462)	11485 (15582)
120 (8.3)	108 (147)	228 (309)	499 (677)	1200 (1628)	2700 (3663)	6000 (8140)	12500 (16959)
130 (9.0)	117 (159)	247 (335)	540 (733)	1300 (1764)	2925 (3968)	6500 (8819)	N/A
140 (9.7)	126 (171)	266 (361)	582 (790)	1400 (1899)	3150 (4274)	7000 (9497)	N/A
150 (10.3)	135 (183)	285 (387)	624 (847)	1500 (2035)	3375 (4579)	7500 (10175)	N/A
Displaced Volume cubic in.	21	44	105	250	511	1153	2306
Full-scale Stroke *Adjustable	1-60 sec.	1-60 sec.	1-90 sec.	1-90 sec.	3-120 sec.	3-180 sec.	3-180 sec.

* Full-Scale Stroke Time 0-90 degree rotation, no load, can vary based on control components selected.

RETROFIT AILING DAMPER DRIVES WITH STANDARD-DD using Rotary Vane Actuators as standard. Other actuators are available.

- Replace any existing brand of Electric or Pneumatic Damper Drives
- Easy *"Drop-in"* installation
- **STANDARD-DD** Series FS Floorstand drives are provided with the same footprint mounting dimensions and output shaft location as the existing drives
- Existing connecting rod linkage is inspected and reused or replaced by **STANDARD-DD**

ON-SITE FIELD SERVICES

STANDARD-DD offers field services at your facility for the following:

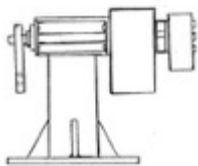
- Supervision of retrofit procedure when replacing an old tired damper drive with a new **STANDARD-DD** Damper Drive
- Our Technicians are familiar with the time and effort necessary for proper on-site installation and maintenance
- Our Field Service Teams will help you save time and energy with our expertise to get the job done right the first time
- Contact your local Representative or our factory office Sales Team for more information



Electric Power Utility Plant Coal Fired Boilers



On-Site Certification



STANDARD-DD Damper Drives, L.L.C.

Div. of MVA Services

Automation Solution Specialist

P.O. Box 311

Royse City, Texas 75189

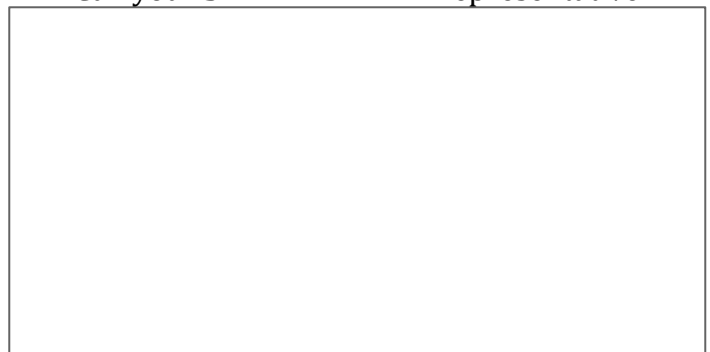
Phone: 214-300-8238

Fax: 214-602-6823

E-mail: sales@standard-dd.com

Website: www.standard-dd.com

Call your **STANDARD-DD** Representative



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