

# DURST

Worldwide Leader in Gear Drives and Transmissions

Standard • Modified • Custom



Pump Drives and Heavy Duty Transfer Cases

# Pump Drives

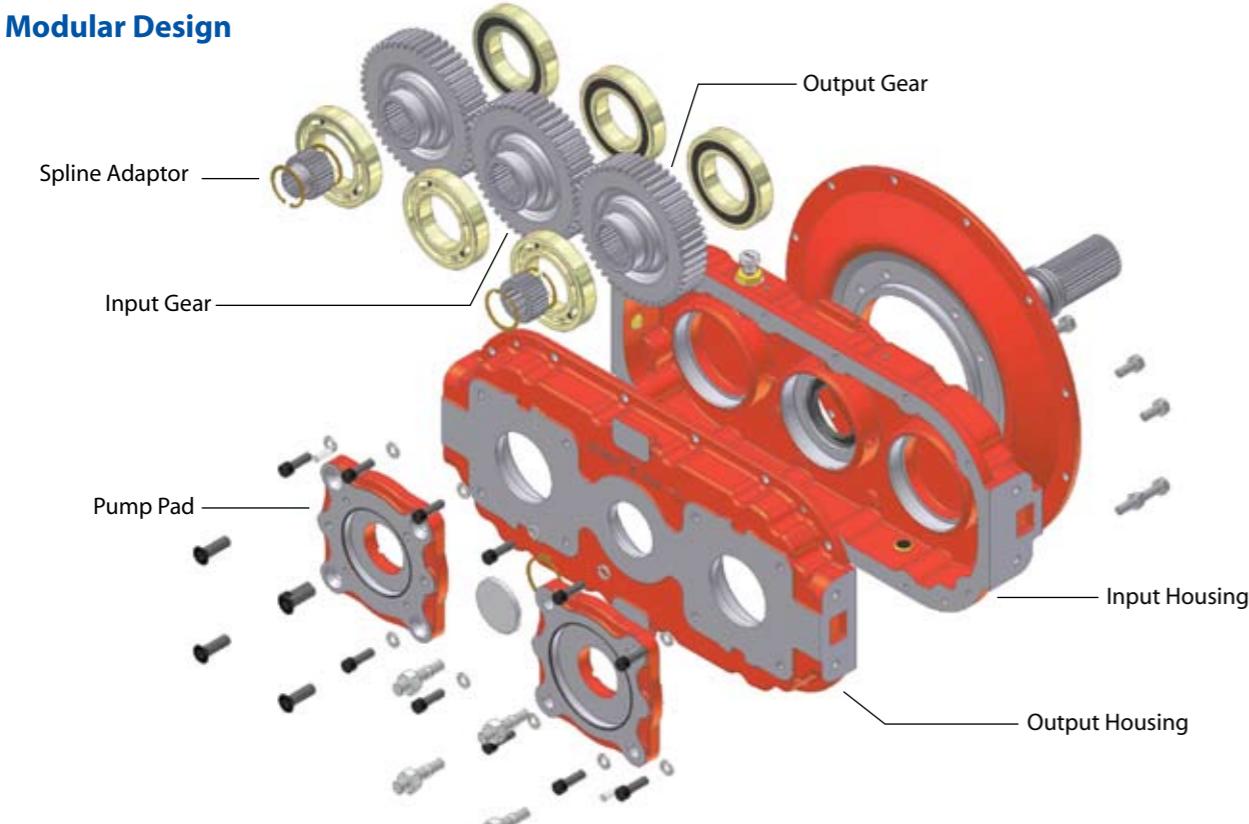


Durst pump drives run cooler, last longer and are quick and easy to service. In the process of engineering these new modular drives, we went back to the drawing board and developed a product that is fundamentally better than any of the competition.

Our patented pump pad design keeps oil constantly flowing through the bearing and provides for wet spline operation, even at startup. All Durst pump drives incorporate class 10 spur gears that run on heavy-duty ball bearings. They also feature an internal spline, which, with a spline adaptor, are compatible with any pump shaft and offer quieter operation.

Our responsive engineering team can quickly modify our modular designs to fit a wide range of custom applications. Back that with top flight customer service and quick turnaround times, and you have a superior pump drive solution.

## Modular Design



## Features

- Patented Modular Design
- Patented Spline lubrication feature built into cast iron housings
- AGMA Class 10 Gears for quieter operation
- All Viton Seals and O-rings
- One-piece Gear and Shaft (solid-on-shaft) Design
- Large Ball Bearings and SOS Gears simplify service
- Drop-in Replacement for competitors' drives
- Pump Pads and Spline Adaptors Available in SAE and DIN Standard
- Optional Equipment Available (Over Hung Load Adaptors and Oil Circulation Systems)

## Applications

- Construction • Mining
- Agricultural • Forestry
- Rail of Way Maintenance
- Oil Exploration Equipment
- Material Handling

## Product Details

### Pump Pads

Durst pump pads do not contain bearing cups. The advantage of this approach is that pump pads can be removed without disrupting the internal workings and alignment of the bearings and gears inside the gearbox.

### Drive Plates

Durst pump drives now use a four-disk drive plate. By using four thin disks, the drive plate becomes slightly wider and increases the rating. Thin disks are much more flexible. When put together, multiple disks absorb more engine vibrations than a single thick disk. The drive plate is no longer captured on the input shaft; instead, it is able to automatically adjust if any engine flywheel misalignment occurs, resulting in smoother operation and longer gearbox life.

### Splines

Durst pump drives have a 29T-12/24 internal spline on the gears, allowing a spline adapter to be used on any SAE or DIN pump shaft. Since the pump shaft mating spline is not integral to the output gear, the mating pump shaft spline adapter can be replaced without the need to remove or replace the output gear. Plus the 29T-12/24 spline significantly reduces wear on both gears and spline adapters.

### Oil Circulation

Durst pump drives feature special oil port locations and oil directing ribs that cause the oil to flow into the pump pad area, lubricating the spline adapters and bearings without the need for external pumps. Oil flows into the pump pad area, and then our patented cast-in recesses cause the oil to flow across the spline for wet spline operation.

### Input Shaft

The Durst pump drive input shaft engages the input gear through a 29T-12/24 spline. The input shaft is retained within the gearbox and allows the drive plate or torsional coupling hub to ride free on the input shaft, reducing misalignment stresses from the engine flywheel and the gearbox. It can be removed or replaced without disturbing the internal workings of the gearbox.

### Heavy Duty Ball Bearings

The heavy-duty ball bearings placed directly in the housing halves don't require shimming, which drastically simplifies assembly. Any adapter can be easily attached without disturbing the gears or bearings in the gearbox. The gearbox can easily be split for servicing without removing the adapters.



### SINGLE PUMP DRIVE (DIRECT)

MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
ZODD	1	444	595	1695	1250	P	2,3,4,5,6	N/A (direct)	A,B,C,D,E	N/A	N/A
1751D	1	444	595	1695	1250	P	1,2,3,4,5	N/A (direct)	A,B,C,D,E	N/A	N/A

### SINGLE PUMP DRIVE (GEARED)

MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
1PD06	1	369	495	1410	1040	P,C,S	0,1,2,3,4	1:1,1,06,1,18,1,25,1,32, 1,40,1,48,1,57,1,67	A,B,C,D,E,F	152.4	6.0
1PD09	1	608	815	2319	1710	P,C,S	0,1,2,3,4	1:1,1,12,1,20, 1,30,1,40,1,70,2,00	A,B,C,D,E,F	228.6	9.0

### TWO PUMP DRIVE

MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
2PD05	1	276	370	949	700	P,S	2,3,4	1:1,1,14,1,40,1,61,2,00	A,B,C,D	254.0	10.0
2PD06	1	369	495	1410	1040	P,C,S	0,1,2,3,4	1:1,1,06,1,18,1,25,1,32, 1,40,1,48,1,57,1,67	A,B,C,D,E,F	304.8	12.0
2PD08	1	541	725	2068	1525	P,C,S	0,1,2,3,4	1:1,1,13,1,23, 1,34,1,40,1,53 INC	A,B,C,D,E,F	406.4	16.0
2PD10	1	708	950	2705	1995	P,C,S	0,1,2,3,4	1:1,1,21,1,29,1,38	A,B,C,D,E,F	533.4	21.0

### THREE PUMP DRIVE

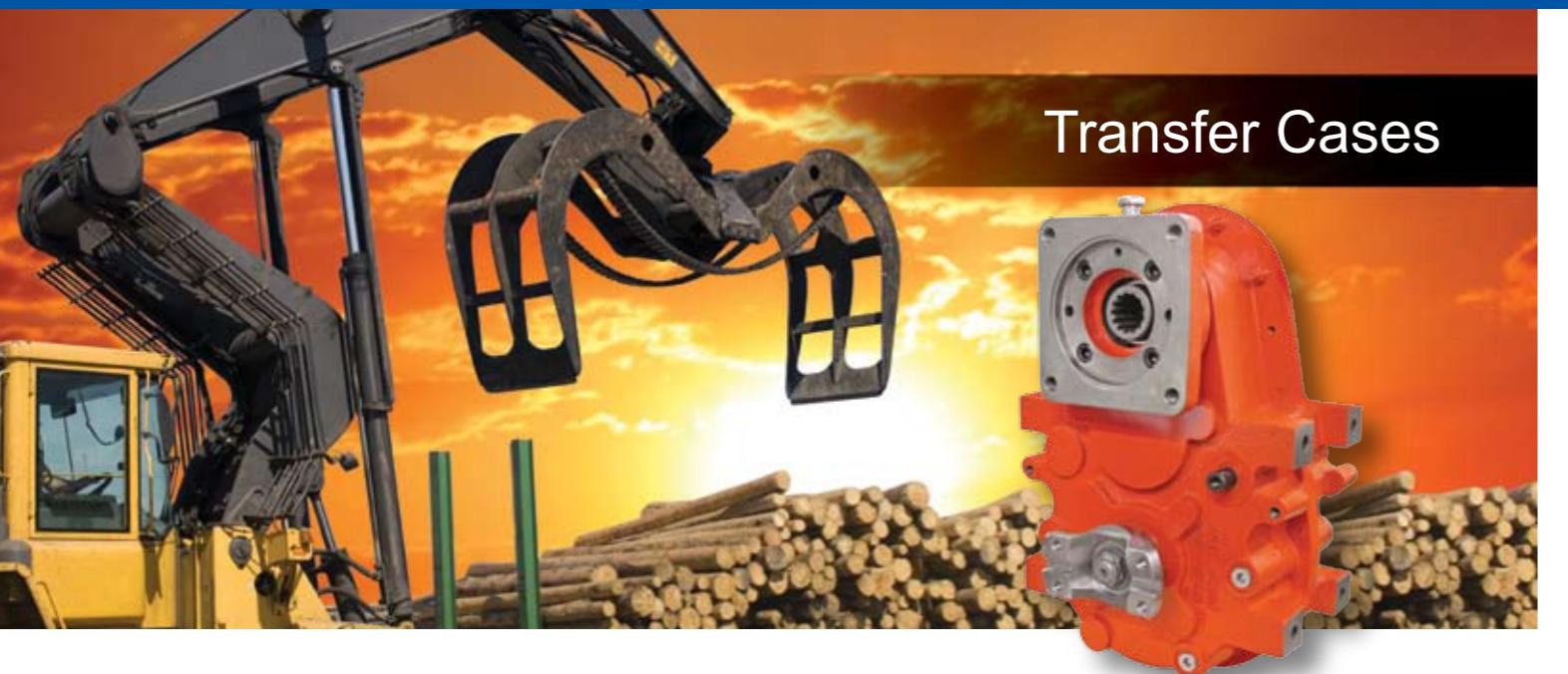
MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
3PD06	1	369	495	1410	1040	P,C,S	0,1,2,3,4	1:1,1,17,1,29,1,36, 1,52 INC,1,67 INC	A,B,C,D	304.8	12.0
3PD08	1	541	725	2068	1525	P,C,S	0,1,2,3,4	1:1,1,13,1,23, 1,34,1,40,1,53 INC	A,B,C,D,E,F	337.6 x 304.8	13.29 x 12.0
3PD10	1	708	950	2705	1995	P,C,S	0,1,2,3,4	1:1,1,21,1,29,1,38	A,B,C,D,E,F	404.1 x 457.2	15.91 x 18.0

### FOUR PUMP DRIVE

MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
4PD08	1	541	725	2068	1525	P,C,S	0,1,2,3,4	1:1,1,13,1,23,1,34, 1,40,1,53 INC	A,B,C,D,E,F	299.7 x 293.1	11.8 x 11.54
4PD09	1	608	815	2319	1710	P,C,S	0,1,2,3,4	1:1,1,12,1,20, 1,30,1,40,1,70 INC	A,B,C,D,E,F	309.4 x 336.6	12.18 x 13.25
4PD11	1	764	1025	2915	2150	P,C,S	0,1,2,3,4	1:1,1,16,1,31,1,39, 1,57 INC	A,B,C,D,E,F	407.7 x 406.4	16.05 x 16.0

### INLINE FOUR PUMP DRIVE

MODEL	RATIO	MAX KW	MAX HP	MAX INPUT TORQUE (Nm)	MAX INPUT TORQUE (FT-LB)	INPUT STYLE	FLYWHEEL HSG. STYLE	RATIO INC. OR DEC.	PUMP ADAPTERS	PUMP CENTER DISTANCE (mm)	PUMP CENTER DISTANCE (in)
4PD10L	1	708	950	2705	1995	S	N/A	1:1,1,14,1,21,1,29, 1,38	A,B,C,D,E,F	533.4	21.0



# Transfer Cases

Durst transfer cases are heavy-duty and engineered to meet the rugged operational demands of a wide range of mobile off-highway and specialty vehicle applications. Targeted toward mobile construction, agricultural, forestry and mining equipment, they excel at transferring between two-wheel and four-wheel drive and delivering mechanical power to auxiliary equipment in high and low ranges.

## Features

**Simplified Mounting** — Symmetrical hole pattern provided on the sides of the gearbox perpendicular to the input/output positions.

**Fewer Parts** — Elimination of parts, such as covers, shims, screws, and sealing compound, provides a design simple to build and service. Potential leak paths have also been removed.

- Cast Iron and Aluminum Housings
- Optional Shifting (pneumatic, hydraulic, mechanical)
- Optional Disconnects
- Optional Differentials
- Lube systems available
- Optional Inputs (mechanical, hydraulics)
- Yokes & Flanges (optional)
- Gearing (Helical, Spur)
- Tapered Roller Bearings (Ball Bearings)

## OFF ROAD - 75% Low Range-25% High Range Continuous (5000 HRS)

MODEL	RATIOS	PEAK INPUT TORQUE (Nm)	PEAK INPUT TORQUE (FT-LBS)	INPUT TORQUE				INPUT POWER (KW/HP)							
				Nm @ 1800 RPM	FT-LBS @ 1800 RPM	Nm @ 2500 RPM	FT-LBS @ 2500 RPM	Nm @ 3000 RPM	FT-LBS @ 3000 RPM	KW @ 1800 RPM	HP @ 1800 RPM	KW @ 2500 RPM	HP @ 2500 RPM		
9D Two Speed	0.89/2.45	4674	3447	2115	1560	1912	1410	1810	1335	399	535	500	671	569	763
	1.04/1.44	7004	5165	2990	2205	2705	1995	2563	1890	564	756	708	950	805	1080
	1.04/2.03	5729	4225	2407	1775	2176	1605	2061	1520	454	608	570	764	647	868
	1.04/2.45	4674	3447	2115	1560	1912	1410	1810	1335	399	535	500	671	569	763
11D Two Speed	1.611/4.466	1231	908	461	340	414	305	393	290	87	117	108	145	124	166
	2.51/6.83	897	662	447	330	407	300	380	280	84	113	106	143	119	160
11D Two Speed	2.51/7.17	844	623	427	315	386	285	366	270	81	108	101	136	115	154

0.73/2.13	5462	4028	2793	2060	2536	1870	2400	1770	526	706	664	890	754	1011
1.09/1.93	4996	3684	2441	1800	2210	1630	2095	1545	460	617	579	776	658	883
1.09/2.46	4096	3021	2292	1690	2075	1530	1966	1450	432	579	543	728	618	828
1.09/2.91	3725	2747	2170	1600	1966	1450	1865	1375	409	548	515	690	586	785
1.70/5.38	2160	1593	1349	995	1288	950	1220	900	254	341	337	452	383	514
1.84/3.82	2640	1947	1654	1220	1526	1125	1444	1065	312	418	399	536	454	608
2.00/5.38	2160	1593	1349	995	1288	950	1220	900	254	341	337	452	383	514
2.19/6.95	1675	1235	1064	785	1037	765	1010	745	201	269	272	364	317	426
3.03/6.95	1675	1235	1064	785	1037	765	1017	750	201	269	272	364	319	428

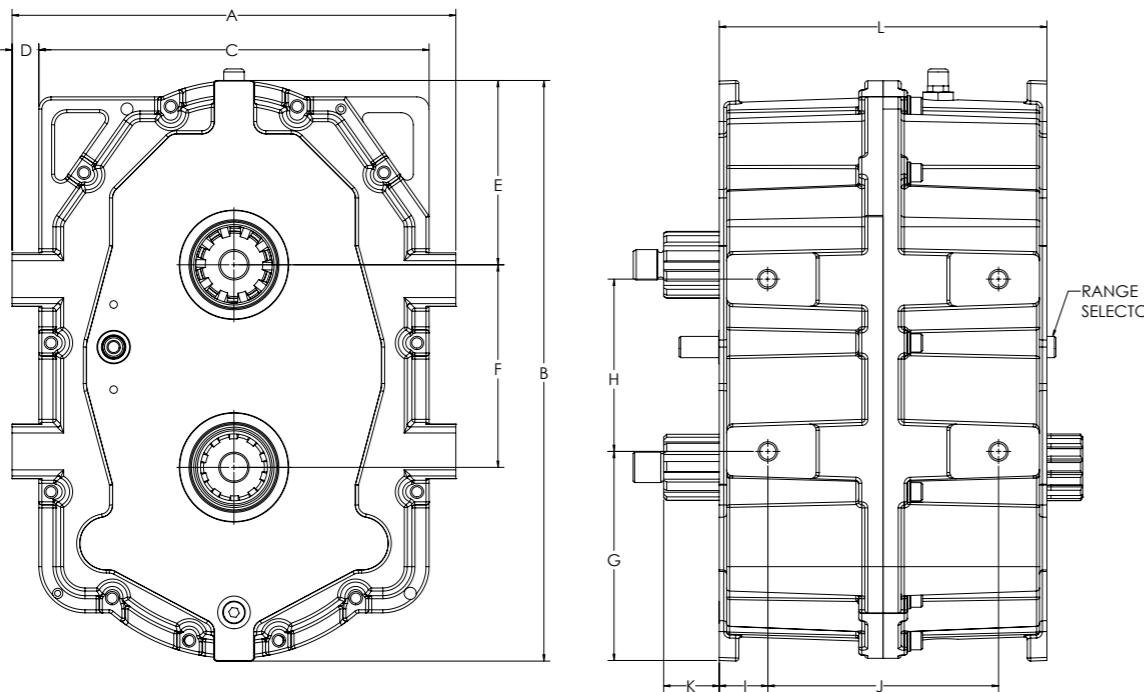
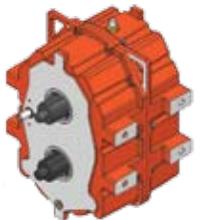
1.06/2.03	5329	3930	1688	1245	1532	1130	1451	1070	318	427	401	538	456	611
1.22/2.52	3846	2836	1431	1055	1295	955	1227	905	270	362	339	455	385	517
1.22/2.98	3513	2591	1336	985	1214	895	1146	845	252	338	318	426	360	483
1.44/2.52	3846	2836	1431	1055	1295	955	1227	905	270	362	339	455	385	517
1.44/2.98	3513	2591	1336	985	1214	895	1146	845	252	338	318	426	360	483
1.58/2.03	5329	3930	1688	1245	1526	1125	1444	1065	318	427	399	536	454	608
1.86/3.86	2513	1853	1105	815	997	735	942	695	208	279	261	350	296	397
1.72/2.03	5329	3930	1688	1245	1526	1125	1444	1065	318	427	399	536	454	608
2.02/4.19	2404	1773	1064	785	963	710	915	675	201	269	252	338	288	386

ON AND OFF ROAD - 50% Low Range-50% High Range Continuous (5000 HRS)															
MODEL	RATIOS	PEAK INPUT TORQUE (Nm)	PEAK INPUT TORQUE (FT-LBS)	INPUT TORQUE						INPUT POWER (KW/HP)					
				Nm @ 1800 RPM	FT-LBS @ 1800 RPM	Nm @ 2500 RPM	FT-LBS @ 2500 RPM	Nm @ 3000 RPM	FT-LBS @ 3000 RPM	KW @ 1800 RPM	HP @ 1800 RPM	KW @ 2500 RPM	HP @ 2500 RPM	KW @ 3000 RPM	HP @ 3000 RPM
9D Two Speed	0.89/2.45	4674	3447	2387	1760	2163	1595	2048	1510	450	603	566	759	643	863
	1.04/1.44	7004	5165	2773	2045	2509	1850	2373	1750	523	701	657	881	745	1000
	1.04/2.03	5729	4225	2712	2000	2461	1815	2332	1720	511	685	644	864	733	982
	1.04/2.45	4674	3447	2387	1760	2163	1595	2048	1510	450	603	566	759	643	863
11D Two Speed	1.611/4.466	1231	908	522	385	468	345	447	330	98	132	122	164	141	188
	2.51/6.83	897	662	502	370	454	335	427	315	95	127	119	159	134	180
	2.51/7.17	844	623	441	325	434	320	414	305	83	111	114	152	130	174
	3.03/6.95	1675</													

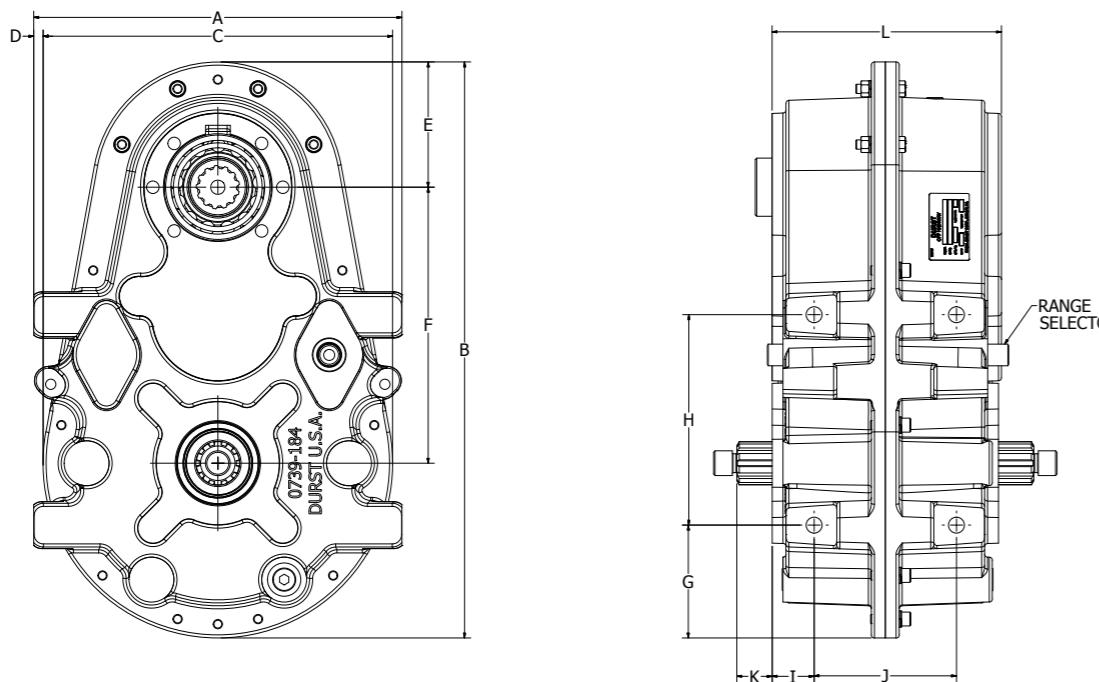


## Transfer Case Line Drawings

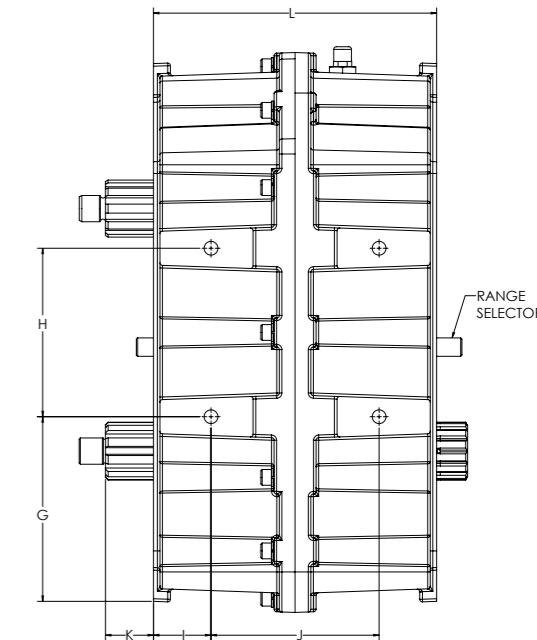
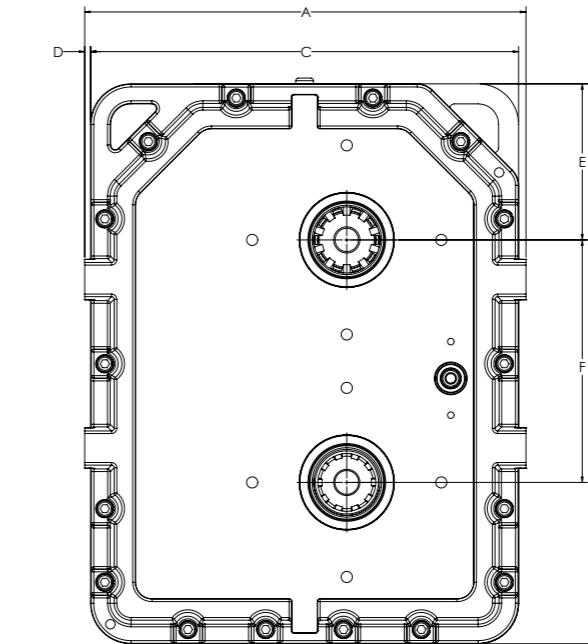
**9D  
TWO SPEED**



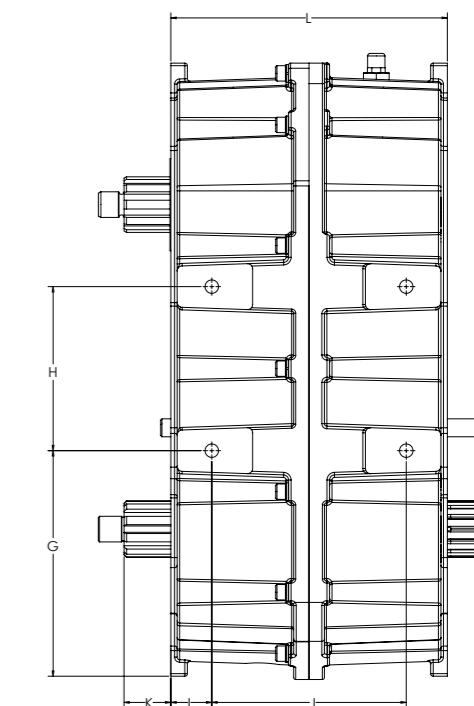
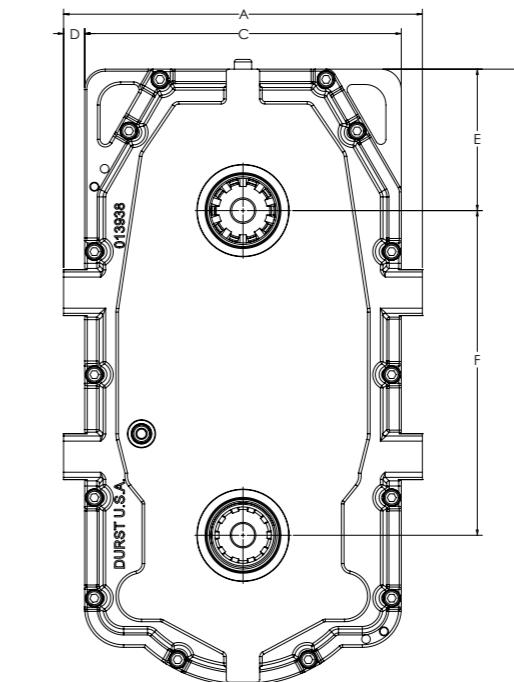
**11D  
TWO SPEED**



**12D  
TWO SPEED**



**16D  
TWO SPEED**



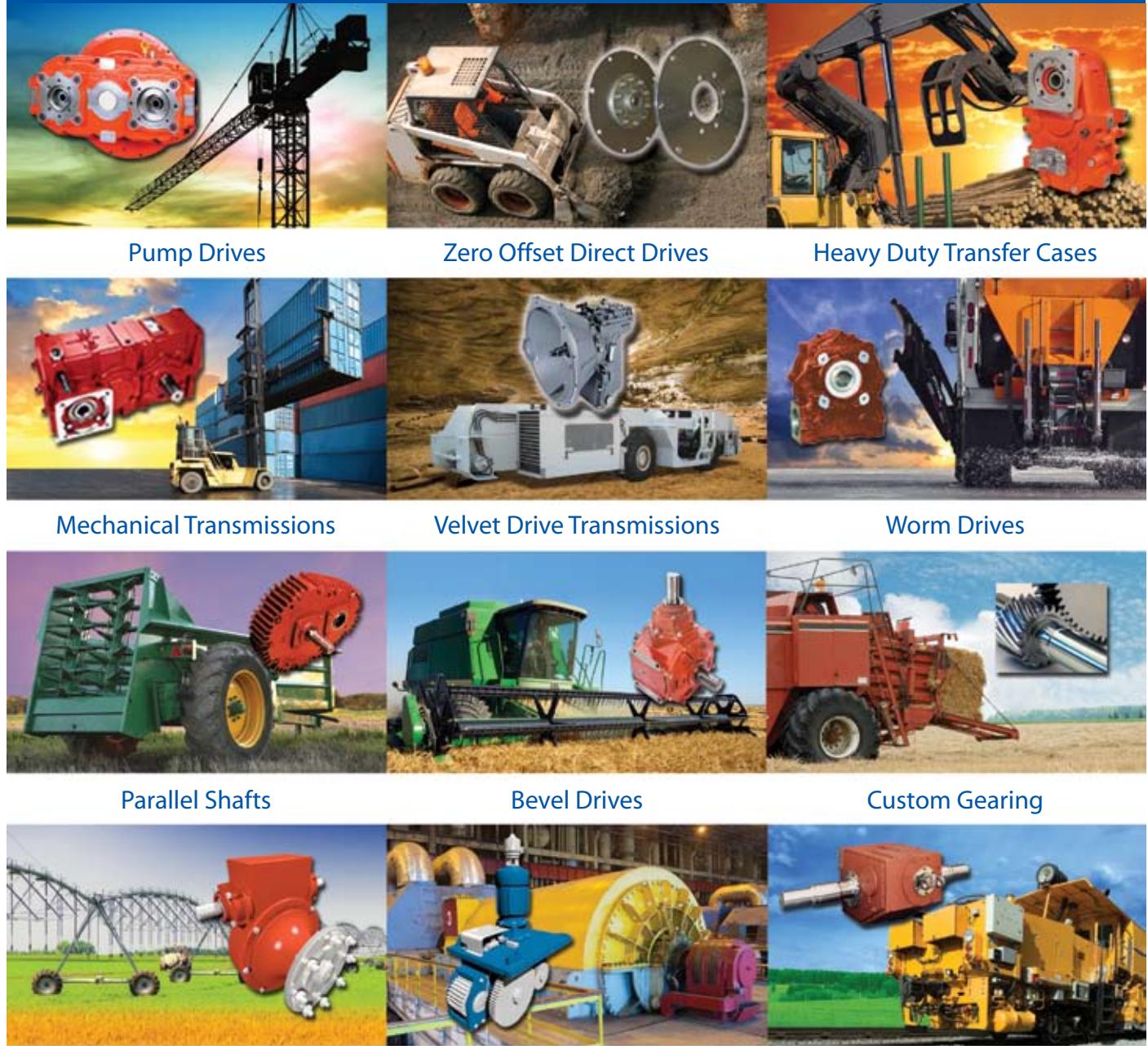
	DURST HEAVY DUTY GEARBOX MODEL							
	9D		11D		12D		16D	
	IN	MM	IN	MM	IN	MM	IN	MM
A	18.25	463.6	14.88	378.0	21.00	533.4	17.50	444.5
B	23.88	606.6	23.27	591.1	26.64	676.7	30.06	763.5
C	16.05	407.9	14.11	358.4	20.37	517.4	15.44	392.2
D	1.10	27.9	0.38	9.7	0.28	7.1	1.03	26.2
E	7.58	192.5	5.06	128.5	7.43	188.7	6.90	175.3
F	8.33	211.6	11.15	283.2	11.54	293.1	15.83	402.1
G	8.60	218.4	4.56	115.8	8.79	223.3	11.00	279.4
H	7.09	180.1	8.50	215.9	8.00	203.2	8.00	203.2
I	2.00	50.8	1.70	43.2	2.74	69.6	2.00	50.8
J	9.49	241.0	5.75	146.1	6.00	152.4	9.49	241.0
K	2.28	57.9	1.43	36.3	2.28	57.9	2.28	57.9
L	13.48	342.4	9.27	235.5	13.48	342.4	13.49	342.6
	LB	KG	LB	KG	LB	KG	LB	KG
Weight Single Speed (lb)	280	127	-	-	395	179	371	168
Weight Two Speed (lb)	346	157	242	110	472	214	455	206

# An Introduction to Durst

Durst is a division of Regal Beloit Corporation, a leading manufacturer of electric motors, mechanical and electrical motion controls and power generation products serving several markets throughout the world for which sales are projected to be in excess of 3 billion euros in 2012. Durst boasts one of the most comprehensive mechanical power transmission product offerings for off-highway, agriculture

and material handling equipment. With over 75 years experience, Durst offers full design, development and test capabilities, three-dimensional solid modeling and four-square testing. Whether standard, modified or custom, our products are designed and manufactured to customer specifications.

## The Durst Product Family



S t a n d a r d • M o d i f i e d • C u s t o m

# DURST

Worldwide Leader in Gear Drives and Transmissions

[www.durstdrives.com](http://www.durstdrives.com)

**Headquarters:**

5560 E. Buss Road,  
Clinton, WI 53525  
+1(800)-356-0775

# REGAL

[www.regalbeloit.com](http://www.regalbeloit.com)

**European Headquarters:**

Djon Hulshof  
Hambridge Lane, Newbury,  
Berkshire, RG14 5TS, United Kingdom  
T: +49 (0) 173 5641 469  
E: [djon.hulshof@durstdrives.eu](mailto:djon.hulshof@durstdrives.eu)