neapco®

Catalog No. DS245
Weatherly No. 090
2013
Supersedes No. DS245 2009

2013 Driveline Catalog

Innovative Drivetrain Solutions®

Slip Yokes

NEAPCO slip yokes are manufactured from alloy steel forgings and ductile castings for increased strength. Spline forms are manufactured through broaching operations that produce industry leading mating part fits. The tight tolerance of these spline fits coupled with reduced end play universal joints reduce time at the dynamic balancing operation and produce high-quality, vibration-free driveshafts.

Stub Shafts

NEAPCO stub shafts are manufactured to bearing tolerances from micro-alloy steel forgings. Our expertise in heat treat produces a consistent case-hardened surface in the critical wraparound area in the base radius. This increases the material strength and eliminates component failures. Spline forms are designed to eliminate hinging and runout when mated with our slip yokes. Mid-ship stubs feature precision ground diameters for center bearing press fit. Slip stubs feature Dura-Slip™ low-friction, wear-resistent nylon coating which provides long service life and reduced NVH in complex driveshaft assemblies.

End Yokes

NEAPCO provides extensive coverage of outboard, mid-ship, transmission, differential, and constant velocity-style end yokes. These end yokes are available in both full round and half round easy service designs. Straight side and involute spline tooth forms are offered. Coverage includes 1000 series auxiliary drives, light & medium duty series, and 1610-1810 heavy duty products. Total part numbers exceed 200 SKUs ranging from pickup trucks to over-the-road trucks.

Center Supports

NEAPCO offers a full line center support bearing program featuring sealed bearings that are pre-lubricated before packaging. The center support product line provides coverage for light duty pickup and vans, medium duty class 4 through 6 trucks and delivery vehicles, and heavy duty class 7 & 8 over-the-road and off highway trucks.

IMPORTANT INFORMATION

Issue Date 2013
Weatherly No. 090
Catalog DS245

Please read the following important information before using this Catalog:

ALWAYS CONSULT AND REVIEW THE ORIGINAL MANUFACTURERS INSTRUCTION MANUAL(S) TO DETERMINE THE APPROPRIATE INSTALLATION PROCEDURES FOR A PARTICULAR VEHICLE APPLICATION.

FOR THE LATEST INFORMATION ALWAYS REFER TO THE NEAPCO eCATALOG

IMPORTANT NOTICE

The data listed in this catalog is correct to the best of our knowledge, having been compiled from sources of information which we believe to be reliable. However, we cannot assume any responsibility for possible error. Parts included in this catalog are manufactured for use only in the intended O.E.M. vehicle application(s). Installation and use in a vehicle that has been modified to any degree that is not consistent and equivalent to O.E.M. production specifications for the vehicle application(s) may result in reduced life or possible part failure.

WARRANTY

We warrant to the original purchaser all new parts to be free of defects in material and workmanship when such parts are used on applications which have been approved by our Engineering Department, but not against damage caused by negligence or abuse.
Our obligations and liabilities under this Warranty shall be limited to replacing or repairing such parts if found upon inspection by us to be defective.
OUR WARRANTIES ARE STRICTLY LIMITED TO THOSE JUST STATED. WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ALL IMPLIED WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OR TRADE, BY STATUE OR OTHERWISE ARE HEREBY DISCLAIMED, and in the event of breach of any warranty or any legal action brought by buyer based on alleged negligence or other tortious conduct of us, buyer's sole and exclusive remedy will be replacement of defective material as stated above. WE WILL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES OF ANY KIND. We make no warranty whatsoever with respect to component parts or accessories not supplied by us.

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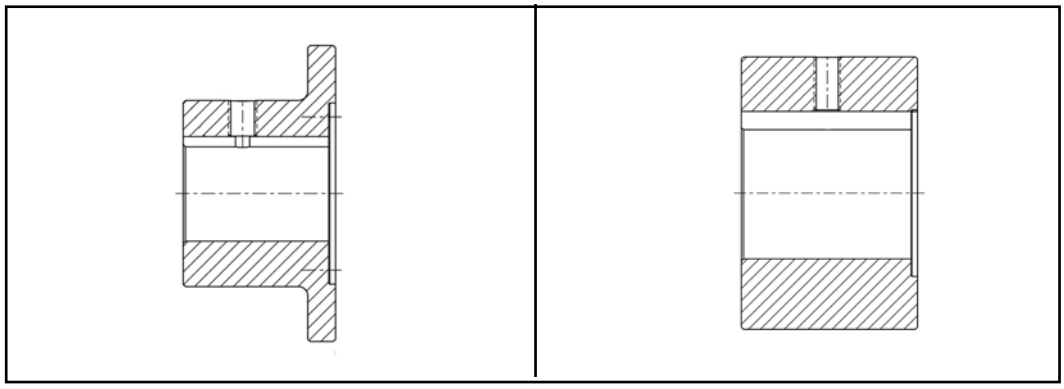
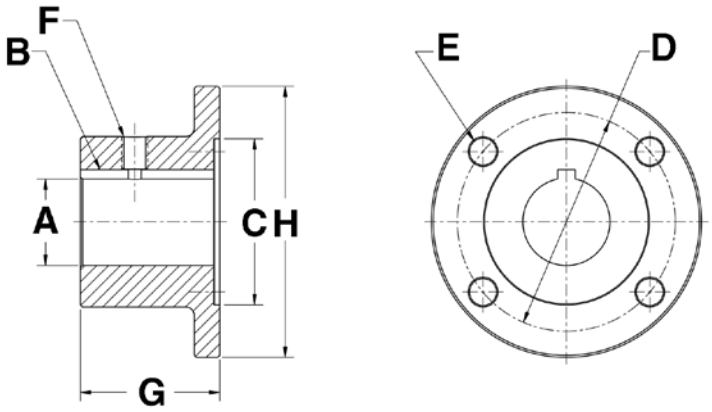


1 Companion Flange

- Standard Flange
- Large Flange

COMPANION FLANGE

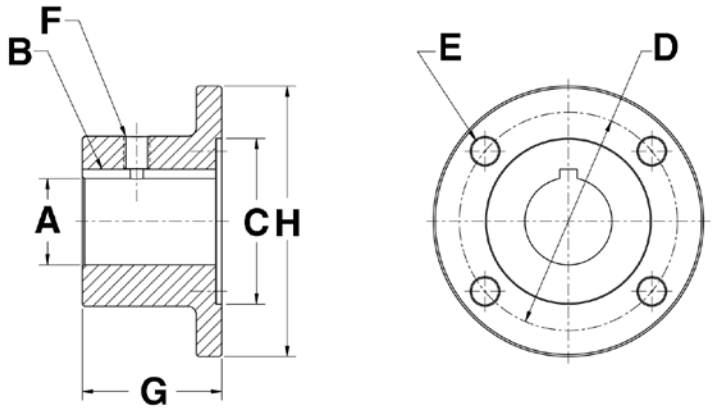
STANDARD FLANGE



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1000 Series *(Mating flange yoke 10-0229)*													
Stan-dard	1000	1.125		0.25		2.25	2.75	0.32	4	0.38-16	2.12	3.50	N10-1-1022-2
Stan-dard	1000	1.250		0.31		2.25	2.75	0.32	4	0.38-16	2.12	3.50	N1-1-273
1310 Series *(Mating flange yoke N2-2-329)*													
Stan-dard	1310	0.750	1.688		0.38	2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313
Stan-dard	1310	1.000		0.25		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-1
Stan-dard	1310	1.125		0.25		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-2
Stan-dard	1310	1.250		0.25		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-3
Stan-dard	1310	1.250		0.31		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-4
Stan-dard	1310	1.375		0.31		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-5
Stan-dard	1310	1.375		0.38		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-6
Stan-dard	1310	1.438		0.38		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-7
Stan-dard	1310	1.500		0.38		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-8
Stan-dard	1310	1.625		0.38		2.38	3.12	0.39	4	0.38-16	2.00	3.88	N2-1-1313-9

COMPANION FLANGE

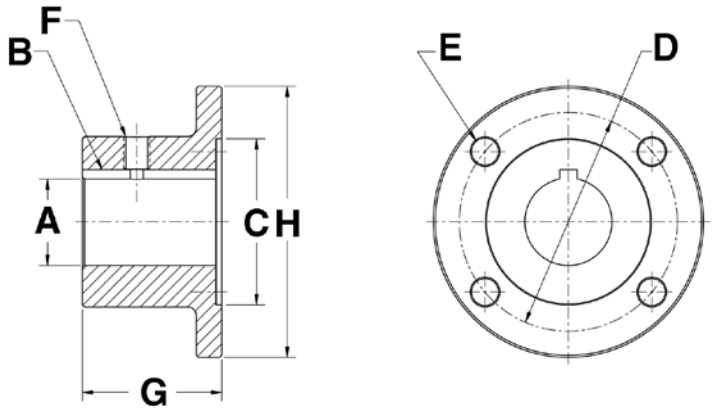
STANDARD FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1350-1410 Series *(Mating flange yoke 1350: N3-2-119 1410: N3-2-159)*													
Standard	1350-1410	1.000		0.25		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-1
Standard	1350-1410	1.000	1.880		0.50	2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013
Standard	1350-1410	1.125		0.25		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-2
Standard	1350-1410	1.250		0.25		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-3
Standard	1350-1410	1.250		0.31		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-4
Standard	1350-1410	1.375		0.31		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-5
Standard	1350-1410	1.375		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-6
Standard	1350-1410	1.438		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-7
Standard	1350-1410	1.500		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-8
Standard	1350-1410	1.625		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-9
Standard	1350-1410	1.750		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-10
Standard	1350-1410	1.875		0.38		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-11
Standard	1350-1410	1.875		0.50		2.75	3.75	0.45	4	0.38-16	2.00	4.56	N3-1-1013-12

COMPANION FLANGE

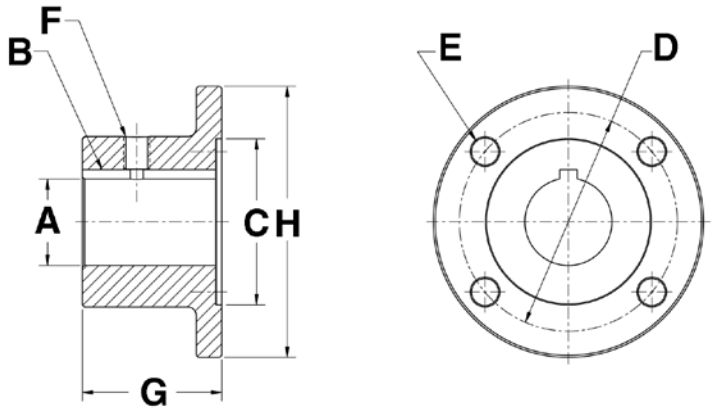
STANDARD FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1480-1550 Series *(Mating flange yoke 1480: N3-2-479 1550: N4-2-669)*													
Standard	1480-1550	1.250	2.438		0.62	3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133
Standard	1480-1550	1.500		0.38		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-1
Standard	1480-1550	1.625		0.38		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-2
Standard	1480-1550	1.750		0.38		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-3
Standard	1480-1550	1.875		0.38		3.75	4.75	0.51	4	.050-13	2.50	5.88	N4-1-1133-4
Standard	1480-1550	1.875		0.50		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-5
Standard	1480-1550	2.000		0.50		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-6
Standard	1480-1550	2.125		0.50		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-7
Standard	1480-1550	2.250		0.50		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-13
Standard	1480-1550	2.250		0.62		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-8
Standard	1480-1550	2.375		0.62		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-9
Standard	1480-1550	2.438		0.62		3.75	4.75	0.51	4	0.50-13	2.50	5.88	N4-1-1133-10

COMPANION FLANGE

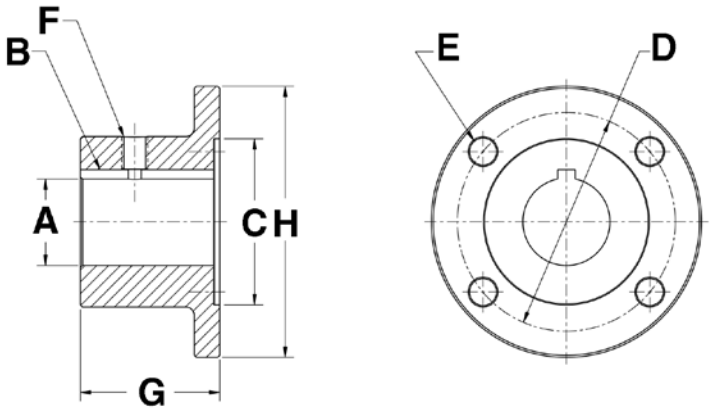
STANDARD FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1610 Series *(Mating flange yoke N5-2-279)*													
Standard	1610	1.250	3.000		0.75	6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873
Standard	1610	2.000		0.50		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-1
Standard	1610	2.125		0.50		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-2
Standard	1610	2.250		0.62		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-3
Standard	1610	2.375		0.62		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-4
Standard	1610	2.438		0.62		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-5
Standard	1610	2.500		0.62		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-6
Standard	1610	2.750		0.62		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-7
Standard	1610	2.938		0.75		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-8
Standard	1610	3.000		0.75		6.62	6.12	0.39	8	0.50-13	3.50	6.88	N5-1-873-9

COMPANION FLANGE

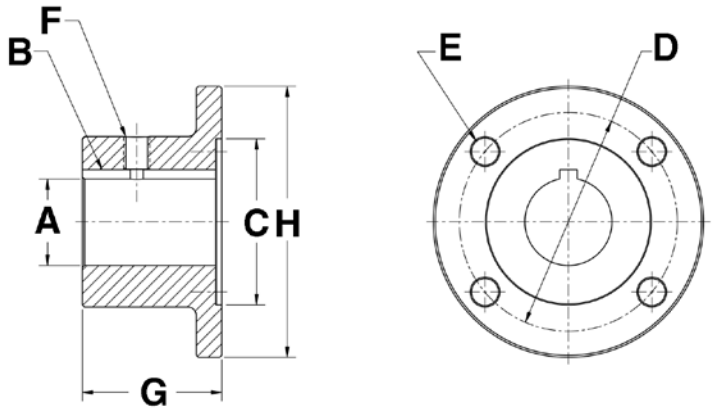
STANDARD FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1710 Series *(Mating flange yoke N6-2-749)*													
Standard	1710	1.250	4.000		1.00	7.75	7.25	0.39	8		4.00	8.00	N6-1-1253
Standard	1710	2.000		0.50		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-9
Standard	1710	2.125		0.50		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-10
Standard	1710	2.250		0.62		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-11
Standard	1710	2.375		0.62		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-12
Standard	1710	2.438		0.62		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-1
Standard	1710	2.500		0.62		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-2
Standard	1710	2.750		0.62		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-3
Standard	1710	2.938		0.75		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-4
Standard	1710	3.000		0.75		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-5
Standard	1710	3.500		0.88		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-6
Standard	1710	3.938		1.00		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-7
Standard	1710	4.000		1.00		7.75	7.25	0.39	8	0.50-13	4.00	8.00	N6-1-1253-8

COMPANION FLANGE

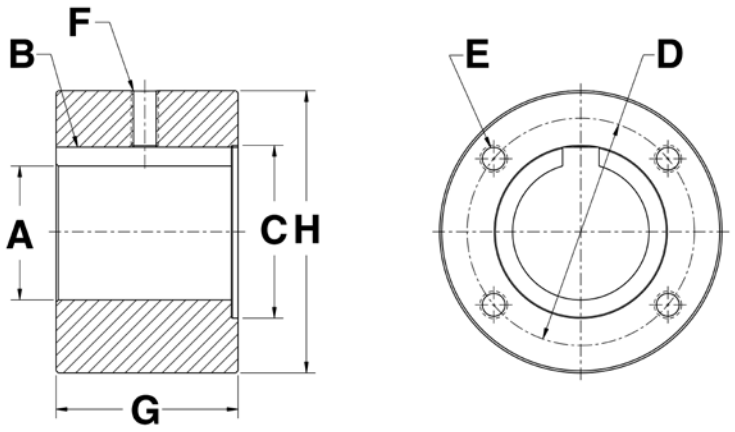
STANDARD FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1810 Series *(Mating flange yoke N6.5-2-329)*													
Standard	1810	1.250	4.000		1.00	7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533
Standard	1810	2.438		0.62		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-1
Standard	1810	2.500		0.62		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-2
Standard	1810	2.750		0.62		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-3
Standard	1810	2.938		0.75		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-4
Standard	1810	3.000		0.75		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-5
Standard	1810	3.500		0.88		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-6
Standard	1810	3.938		1.00		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-7
Standard	1810	4.000		1.00		7.75	7.25	0.45	12	0.50-13	4.00	8.00	N6.5-1-533-8

COMPANION FLANGE

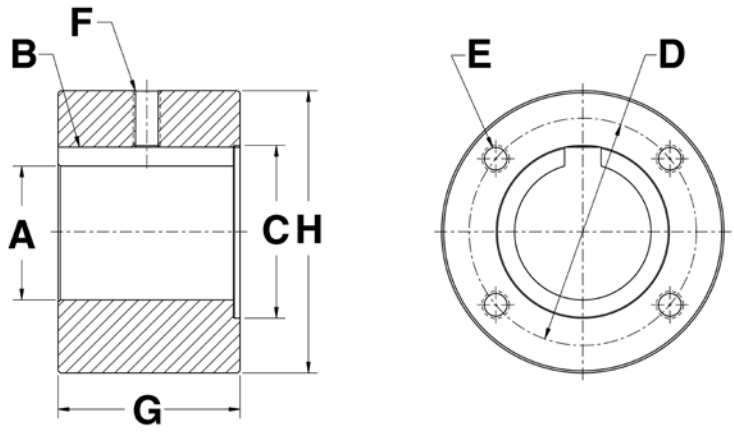
LARGE FLANGE



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1310 Series *(Mating flange yoke N2-2-329)*													
Large	1310	1.375	2.375		0.62	2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323
Large	1310	1.750		0.38		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-1
Large	1310	1.875		0.38		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-2
Large	1310	1.875		0.50		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-3
Large	1310	2.000		0.50		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-4
Large	1310	2.125		0.50		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-5
Large	1310	2.250		0.50		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-8
Large	1310	2.250		0.62		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-7
Large	1310	2.375		0.62		2.38	3.12	0.38-24	4	0.38-16	2.50	3.88	N2-1-1323-6

COMPANION FLANGE

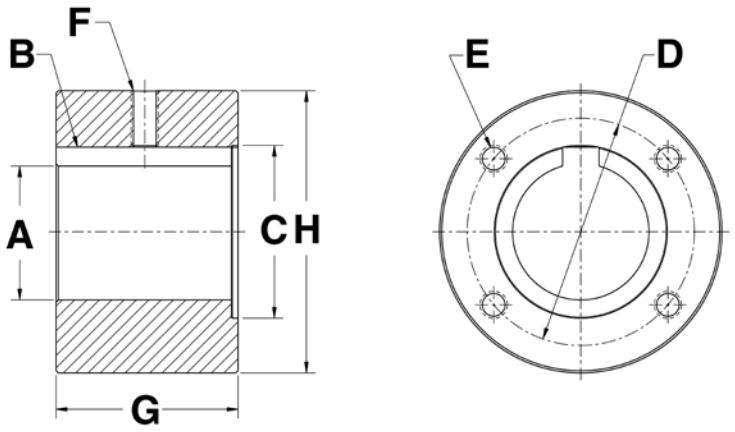
LARGE FLANGE (Cont'd)



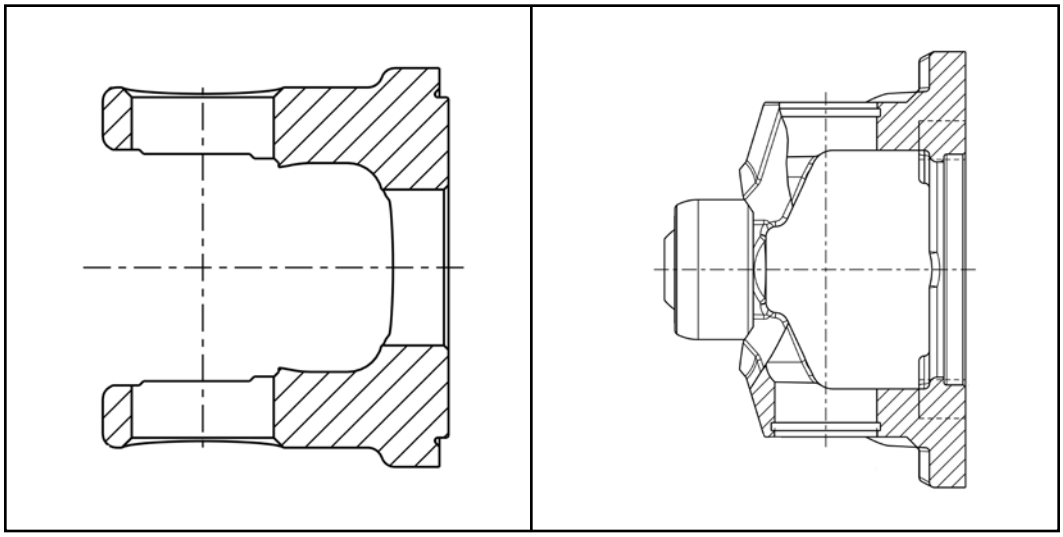
Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1350-1410 Series *(Mating flange yoke 1350: N3-2-119 1410: N3-2-159)*													
Large	1350-1410	1.750	3.000		0.75	2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023
Large	1350-1410	2.000		0.50		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-1
Large	1350-1410	2.125		0.50		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-2
Large	1350-1410	2.250		0.50		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-10
Large	1350-1410	2.250		0.62		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-3
Large	1350-1410	2.375		0.62		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-4
Large	1350-1410	2.438		0.62		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-5
Large	1350-1410	2.500		0.62		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-6
Large	1350-1410	2.750		0.62		2.75	3.75	0.44-20	4	0.38-16	3.00	4.56	N3-1-1023-7

COMPANION FLANGE

LARGE FLANGE (Cont'd)



Flange Type	DL Series	A Bore Dia.	Bore Dia. (Max)	B Key-way	Key-way (Max)	C Pilot Dia.	D Bolt Circle	E Hole/ Thread Size	Holes/ Bolts	F Set Screw Hole Size	G Overall Length	H Outside Dia.	Part Number
1480-1550 Series *(Mating flange yoke 1480: N3-2-479 1550: N4-2-669)*													
Large	1480-1550	2.380	3.750		1.00	3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143
Large	1480-1550	2.500		0.62		3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143-1
Large	1480-1550	2.750		0.62		3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143-2
Large	1480-1550	2.938		0.75		3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143-3
Large	1480-1550	3.000		0.75		3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143-4
Large	1480-1550	3.500		0.88		3.75	4.75	0.50-20	4	0.50-13	3.00	5.88	N4-1-1143-5
1610 Series *(Mating flange yoke N5-2-279)*													
Large	1610	3.120	4.500		1.00	6.62	6.12	0.38-24	8	0.50-13	5.00	6.88	N5-1-883
Large	1610	3.500		0.88		6.62	6.12	0.38-24	8	0.50-13	5.00	6.88	N5-1-883-1
Large	1610	4.000		1.00		6.62	6.12	0.38-24	8	0.50-13	5.00	6.88	N5-1-883-3
1710 Series *(Mating flange yoke N6-2-749)*													
Large	1710	3.500	5.500		1.25	7.75	7.25	0.38-24	8	0.50-13	6.00	8.00	N6-1-1263
1810 Series *(Mating flange yoke N6.5-2-329)*													
Large	1810	3.500	5.500		1.25	7.75	7.25	0.44-20	12	0.50-13	6.00	8.00	N6.5-1-543

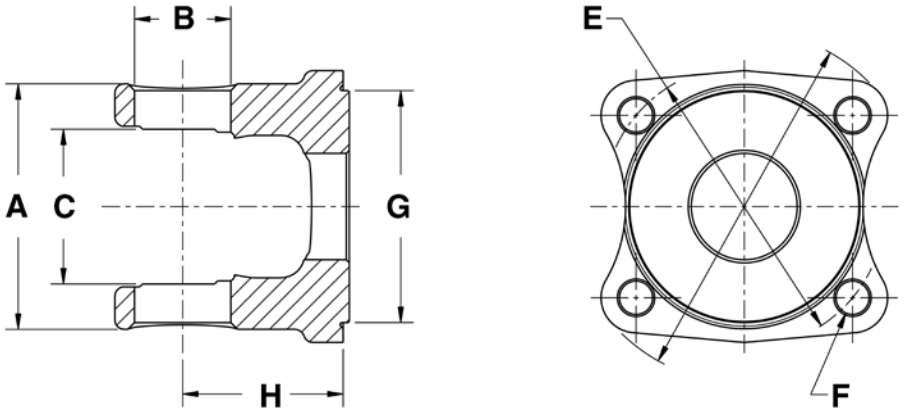


2 Flange Yoke

- Inside Lock-Up
- Outside Lock-Up
- Bearing Plate Construction
- C.V. Flange Adapter
- C.V. Outside Lock-Up
- C.V. Inside Lock-Up

FLANGE YOKE

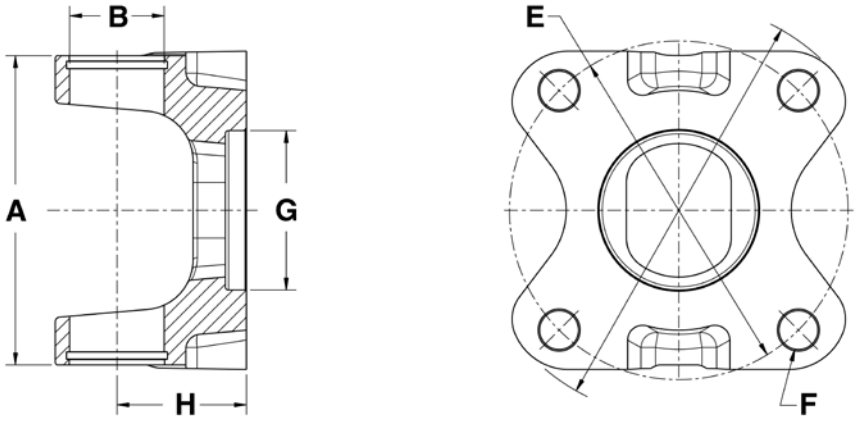
INSIDE LOCK-UP



DL Series	G Pilot Diameter	E Bolt Circle	F Hole/ Thread Size	Number Of Bolt Holes	H Flange Face To CL	Part Number
1000 Series A-2.312 B-0.938 C-1.500						
1000	2.25-M	2.75	0.32	4	1.56	**10-0229**

DL Series	G Pilot Diameter	E Bolt Circle	F Hole/ Thread Size	H Flange Face To CL	Number Of Bolt Holes	Joint Angle	Part Number
3R Series A-3.563 B-1.125 C-2.563							
3R	3.12-F	4.25	0.46	1.69	4	15	**N3R-2-8268**

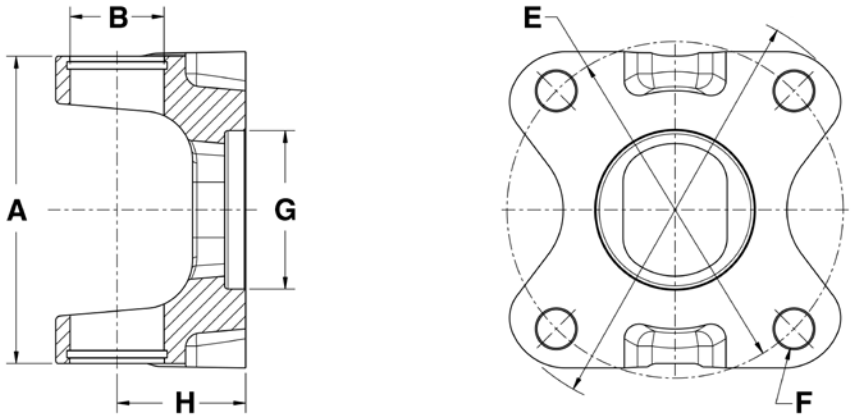
OUTSIDE LOCK-UP



DL Series	G Pilot Diameter	E Bolt Circle	F Hole/ Thread Size	H Flange Face To CL	Number Of Bolt Holes	Joint Angle	Part Number
1210 Series A-2.688 B-1.063							
1210	1.81-M	3.06	0.32	1.50	4	20	**N2-2-2323**
1210	2.00-F	3.50	0.49	1.62	4	20	**N2-2-1049**
1210	2.25-M	2.75	0.32	1.48	4	20	**N2-2-899**
1210	2.87-F	3.94	0.40	1.62	4	20	**N2-2-1050**
1310 Series A-3.469 B-1.063							
1310	1.81-M	3.34 RE	0.32	1.62	4	15	**N2-2-799**
1310	1.81-M	3.34 SQ	0.40	1.62	4	15	**N2-2-799-1**
1310	1.81-M	3.67	0.45	1.56	4	20	**N2-2-780**
1310	2.00-F	3.50	0.49	1.62	4	20	**N2-2-939**
1310	2.00-F	4.25	0.49	1.62	4	19	**N2-2-1379**
1310	2.25-M	2.75	0.32	1.62	4	15	**N2-2-899-1**
1310	2.37-M	3.12	0.39	1.38	4	20	**N2-2-329**
1310	2.37-M	3.12	0.39	1.62	4	30	**N2-2-459**
1310	2.37-M	3.12	0.40	1.38	4	20	**N2-2-329-1**
1310	2.56-M	3.74	0.49	1.56	4	22	**N2-2-1949-1**
1310	2.75-M	3.75	0.45	1.38	4	20	**N2-2-479**
1310	3.63-M	2.88	0.39	1.38	4	20	**N2-2-349**
1310	3.75-M	4.75	0.51	1.38	4	20	**N2-2-579**
1310	3.94-M	3.39	0.32	2.19	6	20	**N2-2-206**
1310	4.09-M	3.58	0.32	2.19	6	20	**N2-2-1757**

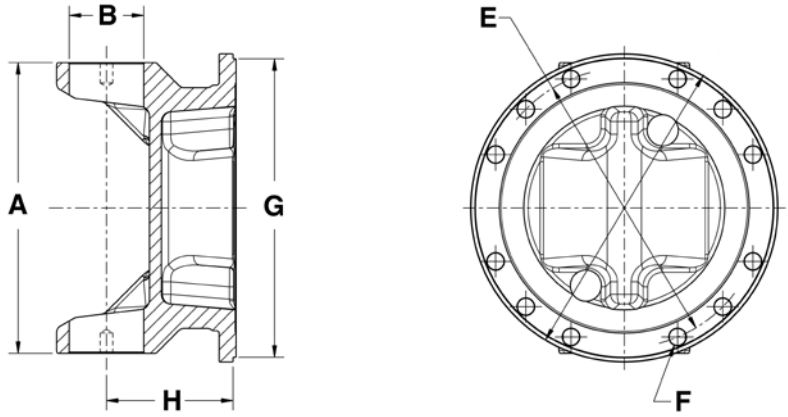
FLANGE YOKE

OUTSIDE LOCK-UP (Cont'd)



DL Series	G Pilot Diameter	E Bolt Circle	F Hole/ Thread Size	H Flange Face To CL	Number Of Bolt Holes	Joint Angle	Part Number
1330 Series A-3.875 B-1.063							
1330	2.00-F	4.25	0.49	1.62	4	19	**N2-2-1369**
1330	2.16-F	3.94	0.49	1.62	4	20	**N2-2-1879-1**
1350 Series A-3.875 B-1.188							
1350	2.00-F	4.25	0.49	1.62	4	20	**N3-2-1579**
1350	2.00-F	4.25	M12x1.75	1.62	4	20	**N3-2-1619**
1350	2.25-F	4.00	0.40	1.62	4	20	**N3-2-5104**
1350	2.64-F	4.41	0.40	1.62	4	20	**N3-2-5107**
1350	2.68-F	4.25	M12x1.75	1.62	4	20	**N3-2-1699**
1350	2.75-M	3.75	0.45	1.56	4	20	**N3-2-119**
1350	2.86-F	4.50	0.51	2.02	4		**N3-2-141**
1410 Series A-4.438 B-1.188							
1410	2.75-M	3.75	0.49	1.69	4	22	**N3-2-159**
1410	3.75-M	4.75	0.51	2.00	4	30	**N3-2-429**
1480 Series A-4.438 B-1.375							
1480	3.75-M	4.75	0.51	2.00	4	20	**N3-2-479**
1550 Series A-5.250 B-1.375							
1550	3.75-M	4.75	0.51	2.00	4	22	**N4-2-669**

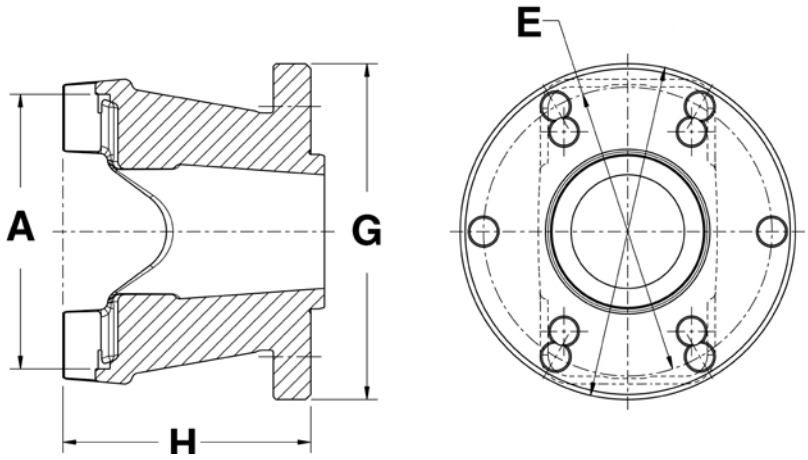
BEARING PLATE CONSTRUCTION



DL Series	G Pilot Diameter	E Bolt Circle	F Hole/ Thread Size	H Flange Face To CL	Number Of Bolt Holes	Joint Angle	Part Number
1610 Series A-5.312 B-1.875							
1610	6.44-M	7.25	0.38	2.75	8		**N5-2-709**
1610	6.63-M	6.12	0.38	2.75	8	22	**N5-2-279**
1710 Series A-6.094 B-1.938							
1710	7.75-M	7.25	0.38	3.00	8	22/29	**N6-2-749**
1710	7.75-M	7.25	0.44	3.00	8	22/29	**N6-2-739**
1760 Series A-7.000 B-1.938							
1760	7.75-M	7.25	0.44	3.38	12	30	**N6.3-2-19**
1810 Series A-7.547 B-1.938							
1810	7.75-M	7.25	0.44	3.38	12	30	**N6.5-2-329**

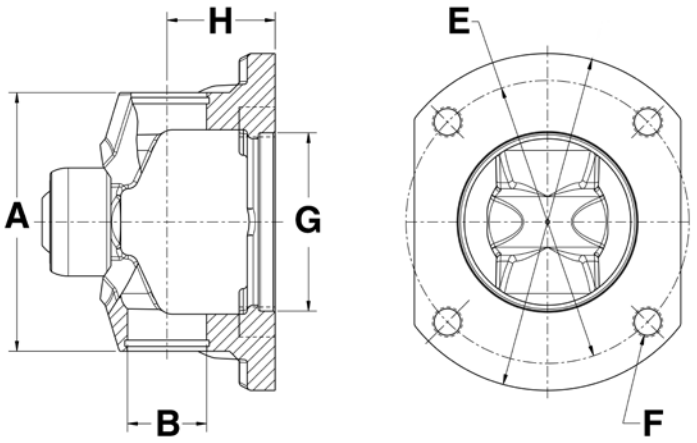
FLANGE YOKE

CV FLANGE ADAPTER



DL Series	G Pilot Dia.	E Bolt Circle	F Hole/ Thread Size	Number Of Bolt Holes	H Flange Face To CL	Stud Socket Dim.	Part Number
1310HR Series A-3.219 B-1.063							
1310HR	3.94-M	3.39	0.32	6	2.91		**N2-83-206**
1310HR	4.09-M	3.58	0.32	6	2.91		**N2-83-288X**

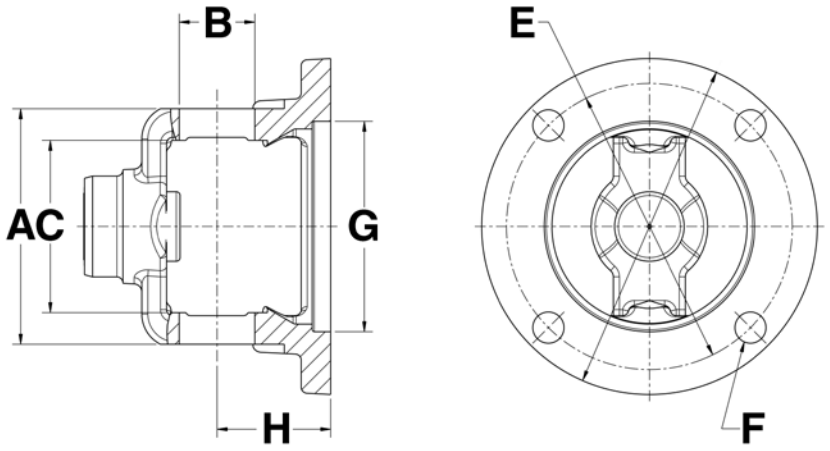
CV FLANGE YOKE - OUTSIDE LOCK-UP



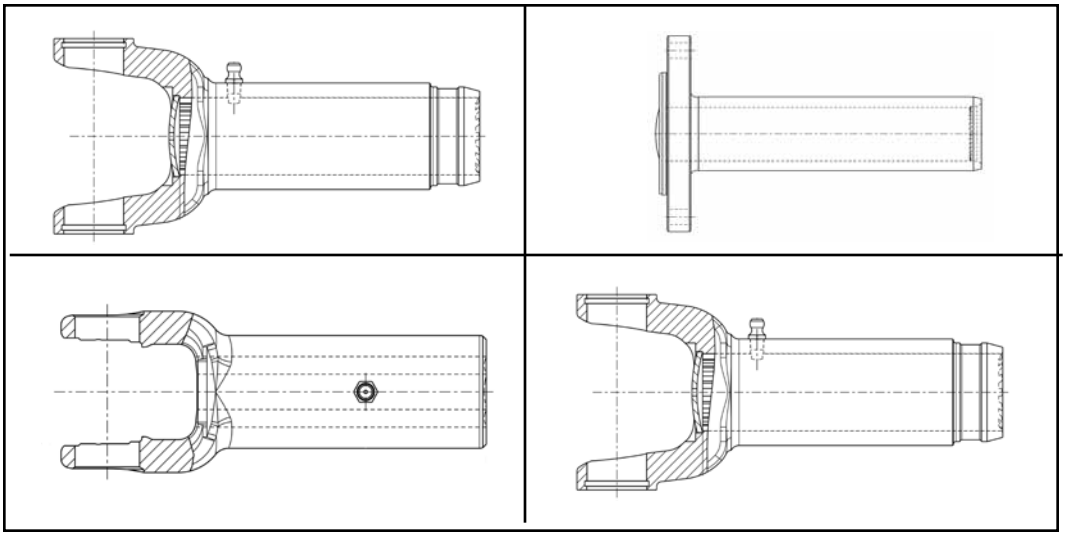
DL Series	G Pilot Dia.	E Bolt Circle	F Hole/ Thread Size	Number Of Bolt Holes	H Flange Face To CL	Stud Socket Dim.	Part Number
1210 Series A-2.688 B-1.063							
1210	2.00-F	3.50	0.49	4	1.62	0.50	**N2-83-489X**
1310 Series A-3.469 B-1.063							
1310	1.81-M	3.34 RE	0.40	4	1.62	0.50	**N2-83-288-2X**
1310	1.81-M	3.34 SQ	0.40	4	1.62	0.50	**N2-83-288-3X**
1310	1.81-M	3.58	0.32	4	1.62	0.50	**N2-83-288-1X**
1310	1.81-M	3.67	0.45	4	1.62	0.50	**N2-83-288-4X**
1310	2.00-F	3.00	0.37-24	4	1.62	0.50	**N2-83-599X**
1310	2.00-F	3.50	0.49	4	1.62	0.50	**N2-83-388X**
1310	2.00-F	3.50	0.49	4	1.62	0.50	**N2-83-543X**
1330 Series A-3.875 B-1.063							
1330	2.00-F	4.25	M12x1.75	4	1.62	0.50	**N2-83-631X**
1330	3.12-F	4.25	0.46	4	1.62	0.50	**N2-83-913X**
1350 Series A-3.875 B-1.188							
1350	2.00-F	4.25	M12x1.75	4	1.62	0.50	**N3-83-024X**
1350	2.16-F	3.94	0.49	4	1.62	0.50	**N3-83-072X**
1350	2.68-F	4.25	M12x1.75	4	1.62	0.50	**N3-83-025X**
1350	3.12-F	3.97	0.46	4	1.62	0.50	**N3-83-1606X**
1350	3.12-F	4.25	0.46	4	1.62	0.50	**N3-83-3281X**

FLANGE YOKE

CV FLANGE YOKE - INSIDE LOCK-UP



DL Series	G Pilot Dia.	E Bolt Circle	F Hole/ Thread Size	Number Of Bolt Holes	H Flange Face To CL	Stud Socket Dim.	Part Number
3R Series A-3.563 B-1.125 C-2.563							
3R	3.12-F	4.25	0.41	4	1.69	0.91	**N3R-83-627**
3R	3.12-F	4.25	0.45	4	1.69	0.91	**N3R-83-482**

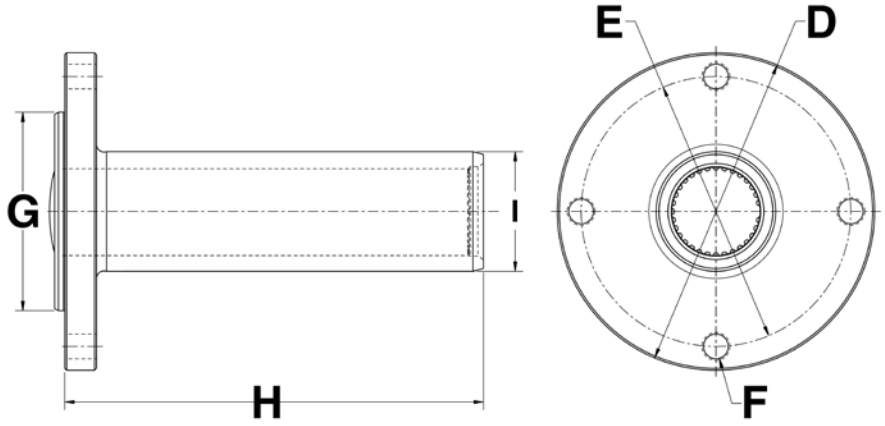


3 Slip Yoke

- Transmission Flange Sleeve
- Non Splined Slip Yoke
- Splined Slip Yoke
- Transmission Slip Yoke
- Bearing Plate Construction

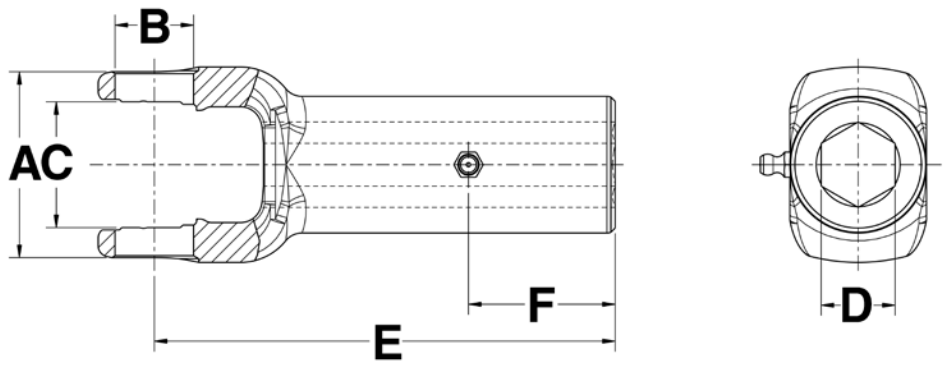
SLIP YOKE

TRANSMISSION FLANGE SLEEVE



DL Series	Spline / Number Teeth	E Bolt Circle	F Hole/ Thread Size	Number Of Bolt Holes	G Pilot Dia.	H Flange Face To End	I Hub Dia.	Part Number
1310 Series								
1310	1.375-31/32	3.00	0.38	4	2.00-M	6.60	1.88	**N2-23-9162X**
1350 Series								
1350	1.312-29/30	4.25	0.44-20	4	3.12-M	3.75	1.65	**N3-23-9164X**
1350	1.375-31/32	4.25	0.44-20	4	3.12-M	5.66	1.89	**N3-23-9168KX**
1350	1.375-31/32	4.25	0.44-20	4	3.12-M	6.60	1.88	**N3-23-9163X**

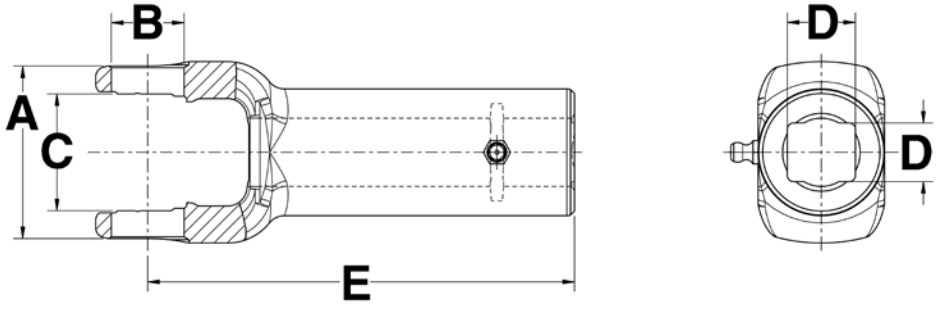
HEX BORE - INSIDE LOCK-UP



DL Series	Bore Type	D Bore Dia.	Spline / Number Teeth	Keyway Width	Keyway Location	E CL To End Of Hub	Lube Fitting Location	F Lube Fitting Distance To End Of Hub	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
1000	Hexagon	0.875	—	—	—	5.50	GAP	1.75	**10-3162**
1000	Hexagon	1.125	—	—	—	5.50	GAP	1.75	**10-0332**

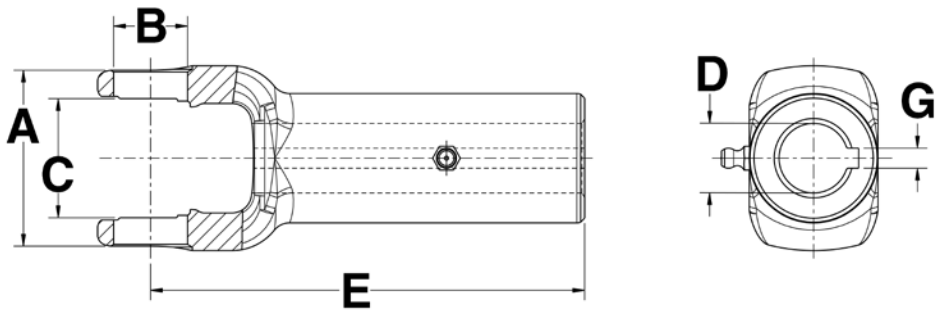
SLIP YOKE

RECTANGULAR BORE - INSIDE LOCK-UP



DL Series	Bore Type	D Bore Dia.	Spline / Number Teeth	Keyway Width	Keyway Location	E CL To End Of Hub	Lube Fitting Location	F Lube Fitting Distance To End Of Hub	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
1000	Rectangular	0.750 x 0.875	—	—	—	5.50	GAP	1.75	**10-1769**

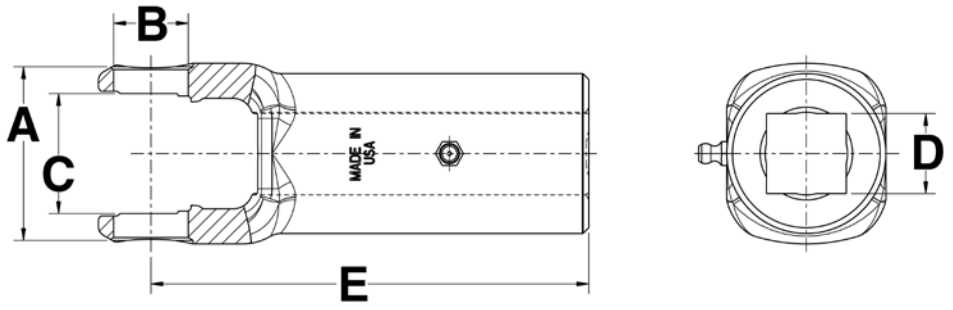
ROUND BORE - INSIDE LOCK-UP



DL Series	Bore Type	D Bore Dia.	Spline / Number Teeth	Keyway Width	Keyway Location	E CL To End Of Hub	Lube Fitting Location	F Lube Fitting Distance To End Of Hub	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
1000	Round	0.750	—	0.19	GAP	5.50	GAP	1.75	**10-0313**
1000	Round	0.813	—	0.25	GAP	5.50	GAP	1.75	**10-0323**
1000	Round	0.875	—	0.25	GAP	5.50	GAP	1.75	**10-0333**
1000	Round	1.000	—	0.25	GAP	5.50	GAP	1.75	**10-0383**
1000	Round	1.125	—	0.25	GAP	5.50	GAP	1.75	**10-1767**
1000	Round	1.125	—	0.31	GAP	5.50	GAP	1.75	**10-3183**
1000	Round	1.250	—	0.31	GAP	5.50	GAP	1.75	**10-3163**

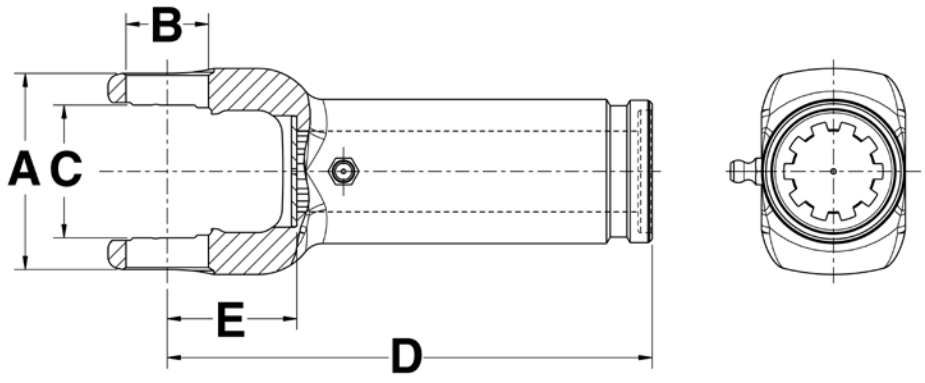
SLIP YOKE

SQUARE BORE - INSIDE LOCK-UP



DL Series	Bore Type	D Bore Dia.	Spline / Number Teeth	Keyway Width	Keyway Location	E CL To End Of Hub	Lube Fitting Location	F Lube Fitting Distance To End Of Hub	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
1000	Square	0.750	—	—	—	5.50	GAP	1.75	**10-0312**
1000	Square	0.875	—	—	—	5.50	GAP	1.75	**10-0322**
1000	Square	1.000	—	—	—	5.50	GAP	1.75	**10-3122**

SPLINED - INSIDE LOCK-UP

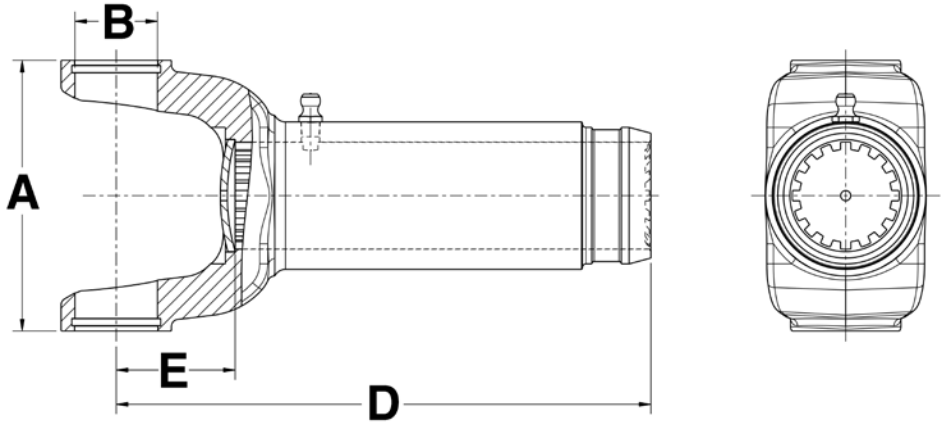


DL Series	Bore Type	D Bore Dia.	Spline / Number Teeth	Keyway Width	Keyway Location	E CL To End Of Hub	Lube Fitting Location	F Lube Fitting Distance To End Of Hub	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
1000	Splined	—	1.125-10	—	—	5.50	GAP	1.75	**10-0381**
1000	Splined	—	1.125-10	—	—	5.50	GAP	3.50	**11-1075**
1000	Splined	—	1.250-16	—	—	5.03	GAP	1.59	**10-0318**
1000	Splined	—	1.250-16	—	—	6.28	EAR	2.38	**10-0319**
1000	Splined	—	1.250-6	—	—	5.50	GAP	2.00	**10-1765**

DL Series	Spline / Number Teeth	D CL To End Of Spline	E CL To Face Washer	Joint Angle	Lube Fitting Part Number	Dust Cap	Part Number
3R Series A-3.563 B-1.125 C-2.563							
3R	1.375-16	7.38	1.36	22	0641-B	280194	**N3R-3-9170KX**
3R	1.375-31/32	7.38	1.36	22	0641-B	ND3A	**N3R-3-9165KX**
7260 Series A-3.000 B-1.078 C-2.125							
7260	1.375-16	6.88	1.20	18	0641-B	280194	**N2-3-7260KX**
7290 Series A-3.563 B-1.126 C-2.625							
7290	1.375-16	6.62	1.00	15	0641-B	280194	**N729-3-1631KX**

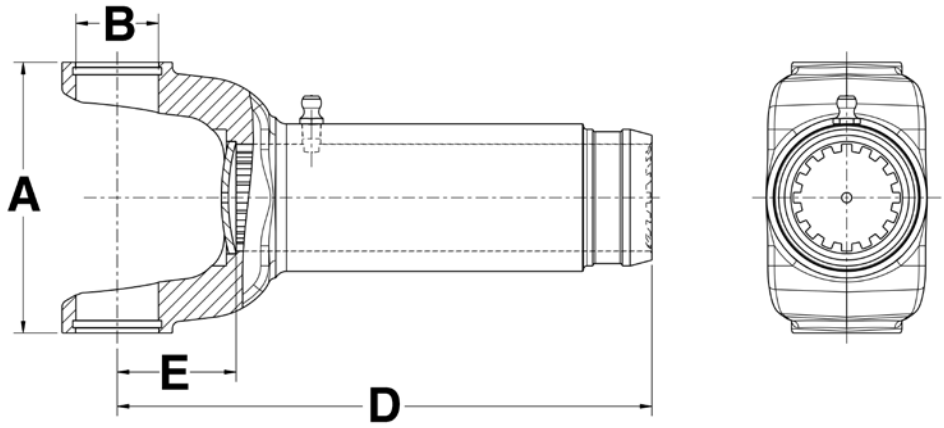
SLIP YOKE

SPLINED - OUTSIDE LOCK-UP



DL Series	Spline / Number Teeth	D CL To End Of Spline	E CL To Face Washer	Joint Angle	Lube Fitting Part Number	Dust Cap	Part Number
1210 Series A-2.688 B-1.063							
1210	1.250-14/16	6.40	1.27	20	0641-B	280196	**N2-3-8861KX**
1210	1.250-14/16	8.02	1.27	20	0641-B	280196	**N2-3-8961KX**
1310 Series A-3.469 B-1.063							
1310	1.181-22	6.56	1.43	30	—	—	**N2-3-1293**
1310	1.250-16	6.56	1.43	30	0641-B	ND2K	**N2-3-4441KX**
1310	1.375-16	5.38	1.05	15	0641-B	280194	**N2-3-128KX**
1310	1.375-16	6.00	1.05	20	0641-B	280194	**N2-3-7981KX**
1310	1.375-16	6.00	1.05	20	0641-B	280195	**N2-3-4951KX**
1310	1.375-16	6.88	1.53	30	0641-B	280194	**N2-3-8001KX**
1310	1.375-16	6.88	1.53	30	0641-B	280195	**N2-3-5221KX**
1310	1.375-16	7.88	1.53	30	0641-B	280194	**N2-3-8021KX**
1310	1.375-16	7.88	1.53	30	0641-B	280195	**N2-3-5821KX**
1310	1.375-31/32	6.62	1.48	15	0641-B	ND3A	**N2-3-7171KX**
1310	1.375-31/32	7.38	1.36	22	0641-B	ND3A	**N2-3-9165KX**
1310	1.500-16	6.88	1.53	30	0641-B	ND3A	**N2-3-6061KX**
1330 Series A-3.875 B-1.063							
1330	1.375-15/16	6.62	1.09	15	0641-B	280194	**N2-3-7681KX**
1330	1.375-16	6.00	1.05	15	0641-B	280194	**N2-3-7961KX**
1330	1.375-16	6.00	1.05	15	0641-B	280195	**N2-3-4681KX**
1330	1.375-16	7.50	1.09	19	0641-B	280194	**N2-3-8041KX**

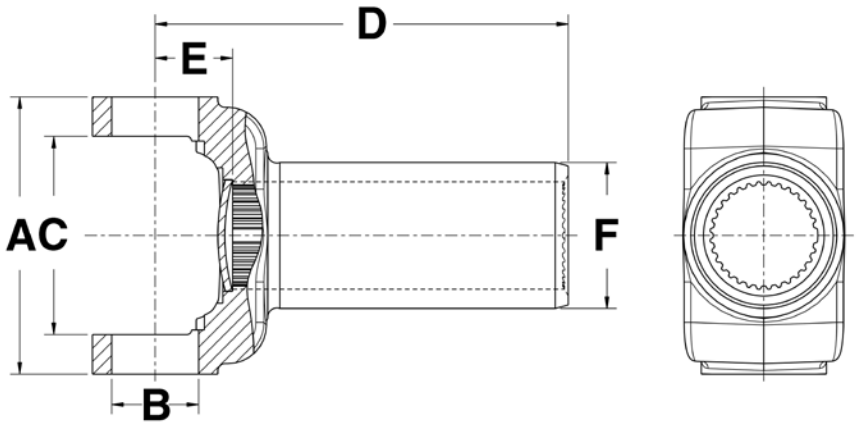
SPLINED - OUTSIDE LOCK-UP (Cont'd)



DL Series	Spline / Number Teeth	D CL To End Of Spline	E CL To Face Washer	Joint Angle	Lube Fitting Part Number	Dust Cap	Part Number
1350 Series A-3.875 B-1.188							
1350	1.375-15/16	6.72	1.22	45	0641-B	280194-1	**N3-3-2701KX**
1350	1.375-16	5.19	1.28	15	0641-B	280195	**N3-3-758KX**
1350	1.375-16	5.81	1.24	15	0641-B	280195	**N3-3-1501KX**
1350	1.375-16	7.31	1.24	20	0641-B	280194	**N3-3-1502KX**
1350	1.375-31/32	6.62	1.23	20	0641-B	ND3A	**N3-3-2471KX**
1350	1.500-16	5.81	1.24	20	0641-B	ND3A	**N3-3-598KX**
1350	1.500-16	6.72	1.22	20	0641-B	ND3A	**N3-3-1561KX**
1350	1.500-16	7.31	1.24	20	0641-B	ND3A	**N3-3-488KX**
1410 Series A-4.438 B-1.188							
1410	1.375-16	5.25	1.18	20	0641-B	280195	**N3-3-788KX**
1410	1.375-16	5.81	1.18	20	0641-B	280195	**N3-3-1481KX**
1410	1.500-16	5.25	1.18	20	0641-B	ND3K	**N3-3-2041KX**
1410	1.500-16	6.50	1.18	20	0641-B	ND3A	**N3-3-118KX**
1410	1.500-16	7.81	1.31	28	0641-B	ND3A	**N3-3-508KX**
1480 Series A-4.438 B-1.375							
1480	1.562-16	6.81	1.36	21	0641-B	ND3H	**N3-3-1601KX**
1480	1.562-16	9.50	2.00	35	0641-B	ND3H	**N3-3-1641KX**
1550 Series A-5.250 B-1.375							
1550	1.750-16	6.88	1.88	22	0641-B	ND4J	**N4-3-1241KX**
1550	1.750-16	8.12	1.38	22	0641-B	ND4J	**N4-3-1411KX**

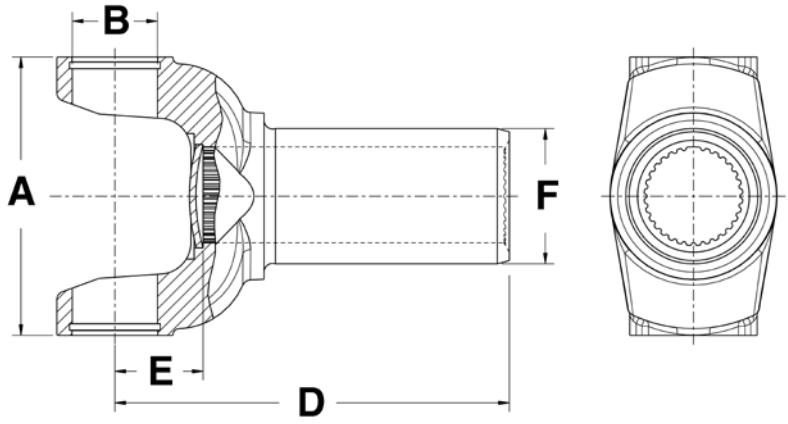
SLIP YOKE

TRANSMISSION INSIDE LOCK-UP



DL Series	Spline / Number Teeth	D CL To End Of Spline	F Seal Dia.	E CL To Face Washer	Joint Angle	Spline Type	Part Number
3R Series A-3.563 B-1.125							
3R	1.172-26/27	5.47	1.50			Full Spline	**N3R-3-12361X**
3R	1.172-26/27	5.47	1.50	0.88		Full Spline	**N3R-3-6081X**
3R	1.172-26/27	6.75	1.50			Counter Bore	**N3R-3-12051X**
3R	1.172-26/27	6.75	1.50			Full Spline	**N3R-3-1658X**
3R	1.377-31/32	7.88	1.88	1.28		Full Spline	**N3R-3-1642X**
3R	1.391-31/32	5.34	1.88	1.00	15	Full Spline	**N3R-3-9762X**
3R	1.391-31/32	7.50	1.88	1.00	15	Counter Bore	**N3R-3-9131X**
3R	1.391-31/32	7.50	1.88	1.00	15	Full Spline	**N3R-3-9161X**
3R	1.391-31/32	8.06	1.88	1.36	22	Full Spline	**N3R-3-9101X**
7290 Series A-3.563 B-1.126							
7290	1.312-29/30	7.56	1.68	1.00	15	Counter Bore	**N729-3-1932X**

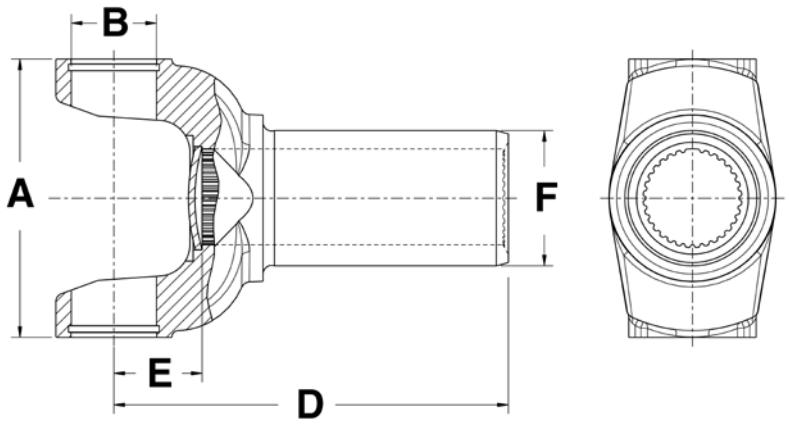
TRANSMISSION OUTSIDE LOCK-UP



DL Series	Spline / Number Teeth	D CL To End Of Spline	F Seal Dia.	E CL To Face Washer	Joint Angle	Spline Type	Part Number
1310 Series A-3.469 B-1.063							
1310	1.172-26/27	5.47	1.50	0.91		Full Spline	**N2-3-6081X**
1310	1.219-27/28	6.03	1.50	1.05	20	Full Spline	**N2-3-4871X**
1310	1.219-27/28	6.53	1.50	1.00	15	Full Spline	**N2-3-8251X**
1310	1.219-27/28	7.03	1.60 / 1.50	1.00	15	Full Spline	**N2-3-12671X**
1310	1.312-29/30	8.06	1.68	1.36	22	Counter Bore	**N2-3-3575X**
1310	1.390-30/31	7.00	1.68	1.53	30	Full Spline	**N2-3-15631X**
1310	1.391-31/32	5.50	1.88	1.00	15	Full Spline	**N2-3-10431X**
1310	1.391-31/32	7.50	1.88	1.00	15	Counter Bore	**N2-3-9131X**
1310	1.391-31/32	7.50	1.88	1.00	15	Full Spline	**N2-3-9161X**
1310	1.391-31/32	8.06	1.88	1.36	22	Full Spline	**N2-3-9101X**
1330 Series A-3.8759 B-1.063							
1330	1.219-27/28	5.97	1.50	1.05	15	Full Spline	**N2-3-5981X**
1330	1.219-27/28	6.66	1.60	1.05	15	Full Spline	**N2-3-14061X**
1330	1.390-30/31	6.03	1.68	1.05	15	Full Spline	**N2-3-6041X**
1330	1.390-30/31	7.03	1.88	1.09	19	Full Spline	**N2-3-10201X**

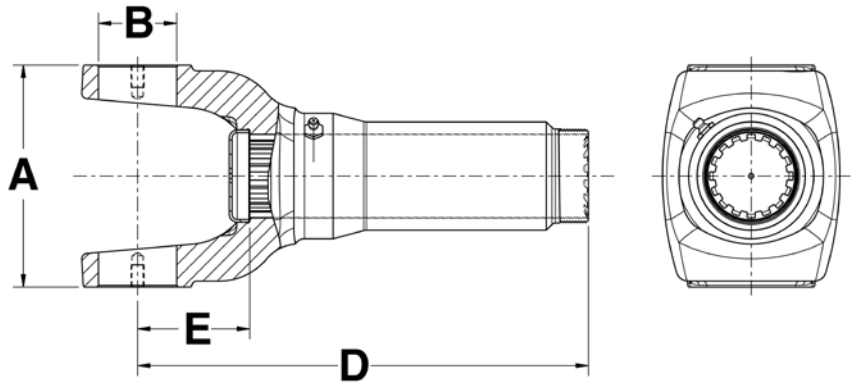
SLIP YOKE

TRANSMISSION OUTSIDE LOCK-UP (Cont'd)



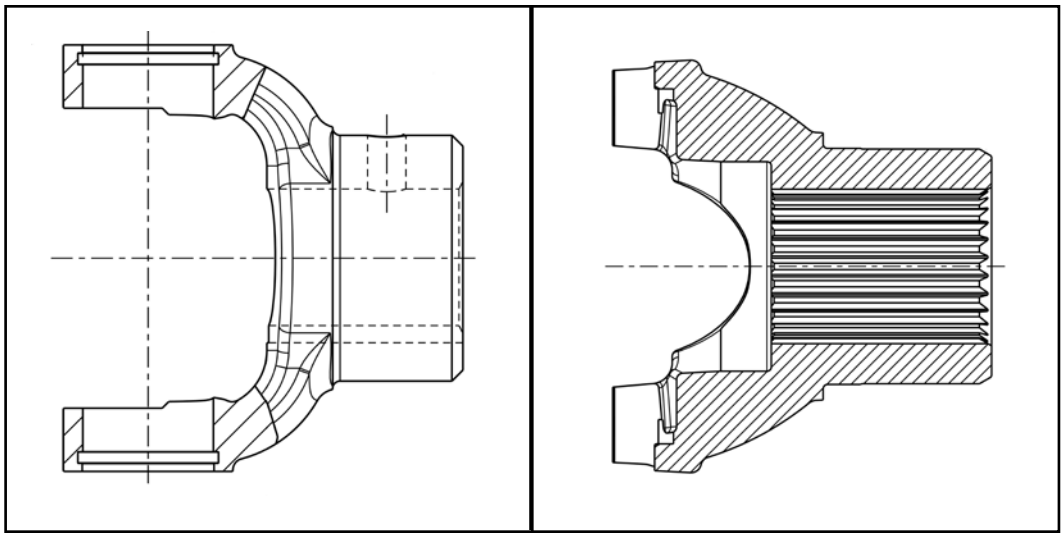
DL Series	Spline / Number Teeth	D CL To End Of Spline	F Seal Dia.	E CL To Face Washer	Joint Angle	Spline Type	Part Number
1350 Series A-3.875 B-1.188							
1350	1.172-26/27	6.94	1.50	1.19		Counter Bore	**N3-3-4281X**
1350	1.375-31/32	5.50	1.88	1.24	15	Counter Bore	**N3-3-2431X**
1350	1.378-31/32	6.94	1.89	1.31		Full Spline	**N3-3-4261X**
1350	1.378-31/32	7.88	1.89	1.31		Full Spline	**N3-3-9467X**
1350	1.390-30/31	6.50	1.68	1.22	20	Full Spline	**N3-3-2491X**
1350	1.390-30/31	7.34	1.88	0.91	20	Full Spline	**N3-3-5431X**
1480 Series A-4.438 B-1.375							
1480	1.390-30/31	6.91	1.88	1.36	21	Full Spline	**N3-3-6021X**

BEARING PLATE CONSTRUCTION



DL Series	Spline / Number Teeth	D CL To End Of Spline	E CL To Face Washer	Joint Angle	Lube Fitting Part Number	Dust Cap	Part Number
1610 Series A-5.312 B-1.875							
1610	2.000-16	10.31	1.94	27	0610-B	N5-86-68	**N5-3-1411KX**
1610	2.000-16	10.81	3.19	35	0610-B	N5-86-68	**N5-3-2261KX**
1610	2.000-16	8.88	2.69	35	0610-B	N5-86-68	**N5-3-368KX**
1610	2.000-16	9.31	3.19	30	0610-B	N5-86-68	**N5-3-288KX**
1710 Series A-6.094 B-1.938							
1710	2.500-16	11.69	2.44	30	0610-B	N6.3-86-18	**N6-3-2651KX**
1710	2.500-16	9.59	1.72	22	0610-B	N6.3-86-18	**N6-3-2671KX**
1760 Series A-7.000 B-1.938							
1760	2.500-16	11.16	2.47	30	0610-B	N6.3-86-18	**N6.3-3-21KX**
1760	2.500-16	9.25	2.92	30	0610-B	N6.3-86-18	**N6.3-3-41KX**
1810 Series A-7.547 B-1.938							
1810	3.000-16	10.25	2.38	30	0610-B	N6.3-86-38	**N6.5-3-1351KX**
1810	3.000-16	11.88	2.38	30	0610-B	N6.3-86-38	**N6.5-3-1371KX**

NOTES

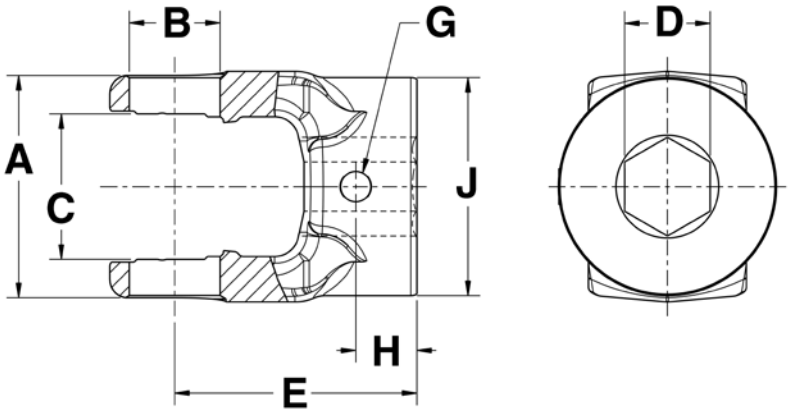


4 End Yoke

- Non Splined Bore
- Splined Bore
- Steering Clamp

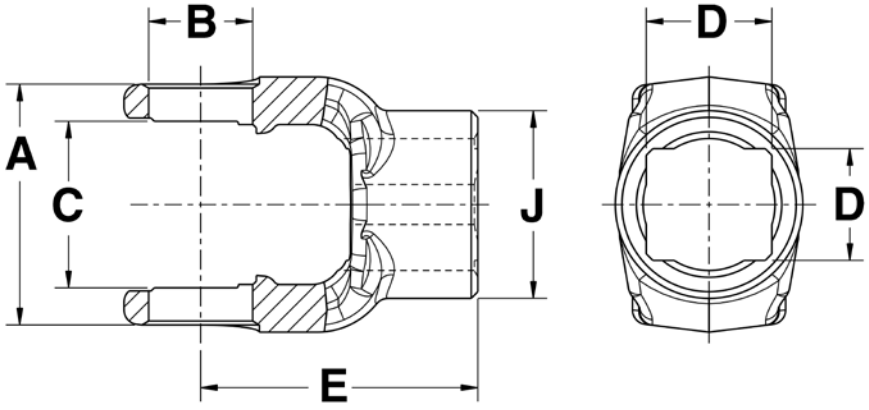
END YOKE

HEX BORE - INSIDE LOCK-UP



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Hexa-gon	1000	0.875	—	—	0.375-16	GAP	0.62	2.50	2.25	—	**10-4282**
Hexa-gon	1000	1.125	—	—	0.375-16	GAP	0.62	2.50	2.25	—	**10-0432**

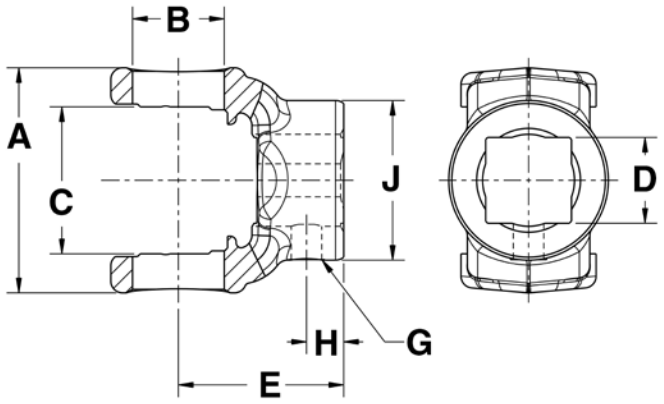
SQUARE BORE - INSIDE LOCK-UP



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Square	1000	0.750	—	—	0.375-16	GAP	0.62	2.50	1.62	—	**10-0422**
Square	1000	0.875	—	—	0.375-16	EAR	0.44	1.69	1.62	—	**10-1707**
Square	1000	0.875	—	—	0.375-16	GAP	0.62	2.50	1.62	—	**10-0412**
Square	1000	1.000	—	—	0.375-16	GAP	0.62	2.50	2.25	—	**10-0452**

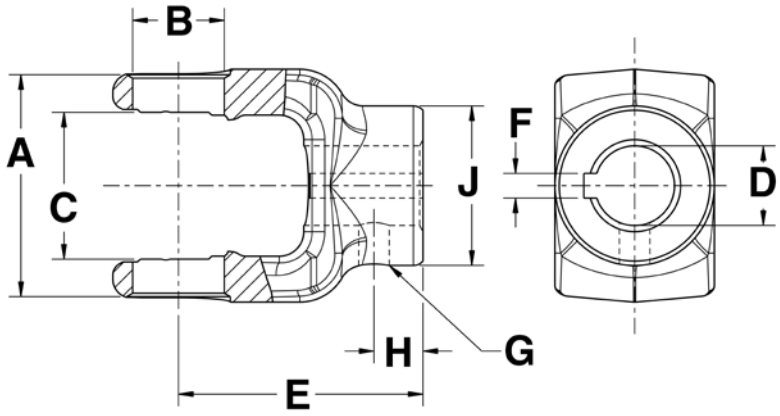
END YOKE

RECTANGULAR BORE - INSIDE LOCK-UP



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Rect-angu-lar	1000	1.000 x 1.125	—	—	—	—	—	2.50	2.25	—	**10-1559**

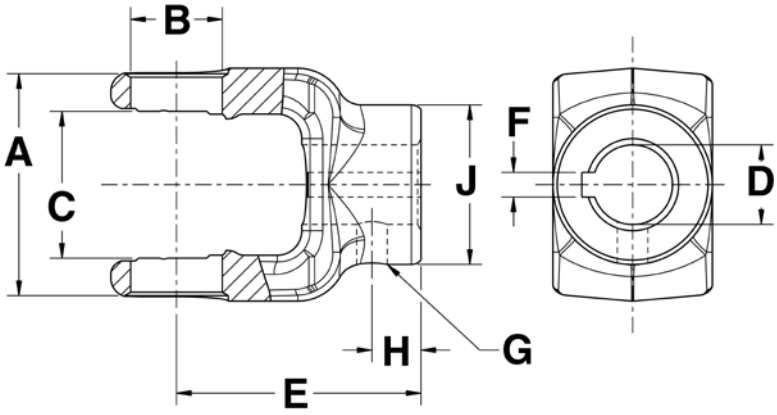
ROUND BORE - INSIDE LOCK-UP



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Round	1000	0.625	0.19	GAP	0.375-16	EAR	0.44	1.69	1.62	—	**10-1708**
Round	1000	0.625	0.19	GAP	0.375-16	EAR	0.62	2.50	1.62	—	**10-4373**
Round	1000	0.750	0.19	GAP	0.375-16	EAR	0.44	1.69	1.62	—	**10-4693**
Round	1000	0.750	0.19	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0413**
Round	1000	0.750	0.19	GAP	0.375-16 (2)	EAR	0.62	2.50	1.62	—	**10-4133**
Round	1000	0.750	0.25	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0423**
Round	1000	0.812	0.19	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0433**
Round	1000	0.812	0.25	GAP	0.375-16	EAR	0.62	2.50	1.62	—	**10-4173**
Round	1000	0.812	0.25	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0443**
Round	1000	0.875	0.19	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0453**
Round	1000	0.875	0.25	GAP	0.375-16	EAR	0.62	2.50	1.62	—	**10-4453**
Round	1000	0.875	0.25	GAP	0.375-16	GAP	0.44	1.69	1.62	—	**10-4703**
Round	1000	0.875	0.25	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0463**

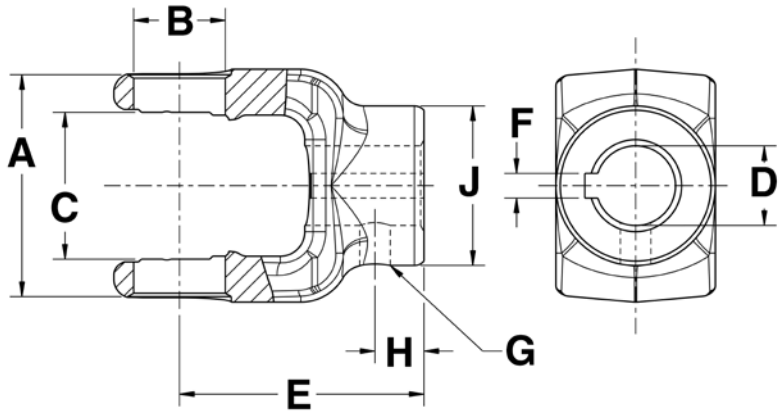
END YOKE

ROUND BORE - INSIDE LOCK-UP (Cont'd)



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Round	1000	0.938	0.25	GAP	0.375-16	EAR	0.62	2.50	1.62	—	**10-0473**
Round	1000	1.000	—	—	0.375 DT (2)	EAR	0.62	2.50	1.62	—	**10-4443**
Round	1000	1.000	0.19	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0483**
Round	1000	1.000	0.25	GAP	0.375-16	EAR	0.44	1.69	1.62	—	**10-1705**
Round	1000	1.000	0.25	GAP	0.375-16	EAR	0.62	2.50	1.62	—	**10-4573**
Round	1000	1.000	0.25	GAP	0.375-16	GAP	0.62	2.50	1.62	—	**10-0493**
Round	1000	1.063	0.25	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4163**
Round	1000	1.125	0.25	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4103**
Round	1000	1.125	0.25	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4143**
Round	1000	1.125	0.31	GAP	0.375-16	GAP	0.62	2.50	2.25	—	**10-4113**
Round	1000	1.125	0.31	GAP	0.375-16	GAP	0.62	2.50	2.25	—	**10-4473**
Round	1000	1.188	0.25 / 0.31	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-1574**
Round	1000	1.188	0.31	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4153**

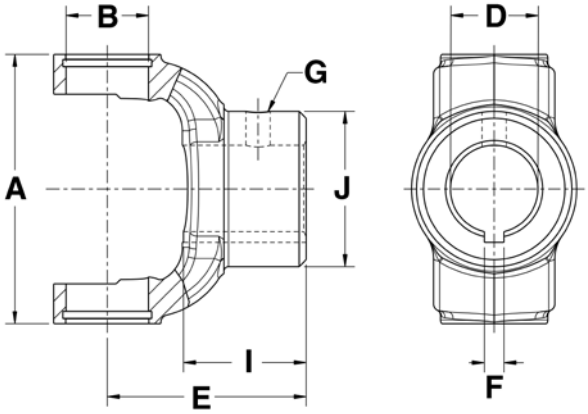
ROUND BORE - INSIDE LOCK-UP (Cont'd)



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500											
Round	1000	1.250	—	—	0.375 DT (2)	EAR	0.62	2.50	2.25	—	**10-4363**
Round	1000	1.250	0.25	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4183**
Round	1000	1.250	0.31	GAP	0.375-16	EAR	0.62	2.50	2.25	—	**10-4193**
Round	1000	1.250	0.31	GAP	0.375-16	GAP	0.62	2.50	2.25	—	**10-4123**
Round	1000	1.375	0.31	GAP	0.375-16	EAR	0.62	2.50	2.00	—	**10-4293**
Round	1000	1.500	—	—	0.281 DT (2)	EAR	0.50	2.50	2.00	—	**10-1532**

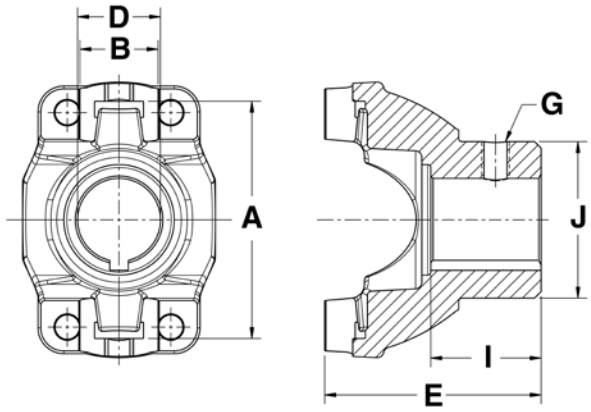
END YOKE

ROUND BORE - OUTSIDE LOCK-UP



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1310 Series A-3.469 B-1.063											
Round	1310	0.750	—	—	—	—	—	2.56	2.00	1.62	**N2-4-177**
Round	1310	0.875	0.25	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-583**
Round	1310	1.000	0.25	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-473**
Round	1310	1.125	0.25	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-503**
Round	1310	1.250	—	—	—	—	—	2.56	2.00	1.62	**N2-4-533-1**
Round	1310	1.250	0.25	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-573**
Round	1310	1.250	0.31	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-533**
Round	1310	1.375	—	—	—	—	—	2.56	2.00	1.62	**N2-4-803-1**
Round	1310	1.375	0.31	EAR	0.375-16	GAP	0.62	2.56	2.00	1.62	**N2-4-1103**
Round	1310	1.375	0.38	EAR	0.375-16	EAR	0.62	2.56	2.00	1.62	**N2-4-803**
Round	1310	1.500	0.38	EAR	0.375-16	EAR	—	2.56	2.12	1.62	**N2-4-1233**

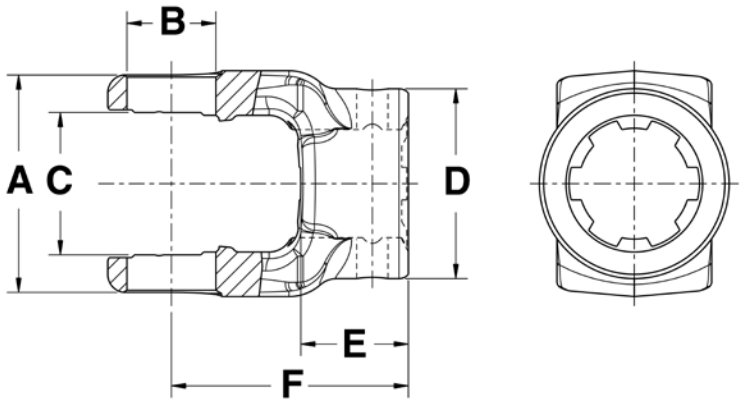
ROUND BORE - U-BOLT CONSTRUCTION



Bore Type	DL Series	D Bore Dia.	F Key-way Width	Key-way Loca-tion	G Set Screw Hole Size	Set Screw Loca-tion	H Set Screw Dis-tance To End Of Hub	E CL To End Of Hub	J Hub Dia.	I Length Thru Bore	Part Number
1310 Series A-3.219 B-1.063											
Round	1310HR	1.125	0.25	EAR	0.375-16	EAR	0.62	2.94	2.12	1.50	**N2-4-782**
Round	1310HR	1.250	0.25 / 0.31	EAR	0.375-16	EAR	0.62	2.94	2.12	1.50	**N2-4-783-1**
Round	1310HR	1.250	0.31	EAR	0.375-16	EAR	0.62	2.94	2.12	1.50	**N2-4-783**
Round	1350HR	1.250	0.31	EAR	0.375-16	EAR	0.62	3.00	2.25	1.50	**N3-4-283-1**

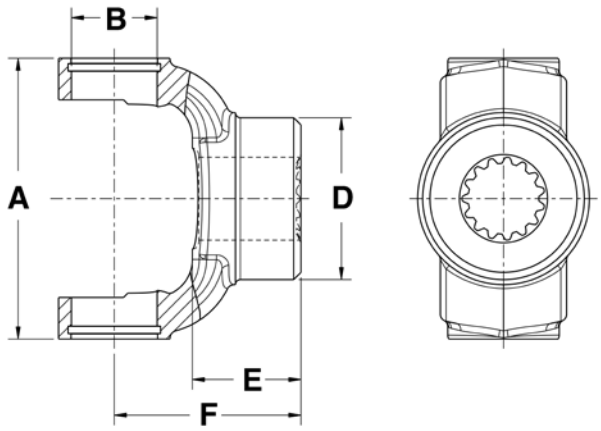
END YOKE

SPLINED - INSIDE LOCK-UP



Bore Type	DL Series	Spline / Number Teeth	Set Screw Hole Size	Set Screw Loca-tion	Set Screw Distance To End Of Hub	F CL To End Of Hub	D Hub Dia.	E Length Through Bore	Part Number
1000 Series A-2.312 B-0.938 C-1.500									
Splined	1000	0.875-13	0.375-16	EAR	0.50	2.50	1.62	2.03	**10-4481**
Splined	1000	1.125-6	0.330 DT (2)	EAR	0.50	2.50	1.62	2.03	**10-0411**
Splined	1000	1.375-6	0.330 DT (2)	EAR	0.38	2.50	2.00	2.03	**10-0431**

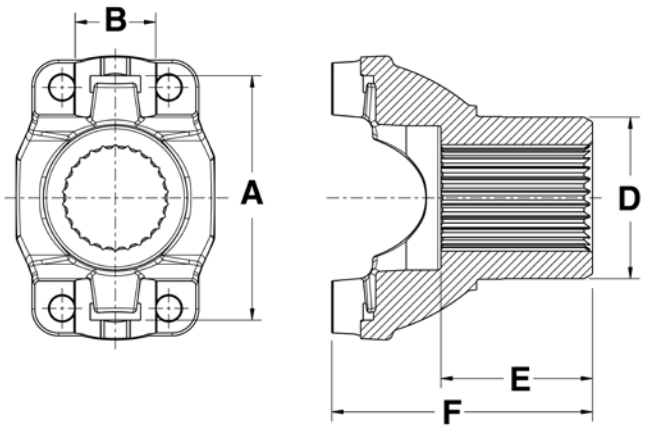
SPLINED - OUTSIDE LOCK-UP



Bore Type	DL Series	Spline / Number Teeth	Set Screw Hole Size	Set Screw Loca-tion	Set Screw Distance To End Of Hub	F CL To End Of Hub	D Hub Dia.	E Length Through Bore	Part Number
1310 Series A-3.469 B-1.063									
Splined	1310	0.875-13	0.375-16	EAR	0.62	2.56	2.00	1.52	**N2-4-3331**
Splined	1310	1.000-15	—	—	—	2.31	2.00	1.26	**N2-4-4921**
Splined	1310	1.250-19	—	—	—	2.50	2.00	1.46	**N2-4-1087**

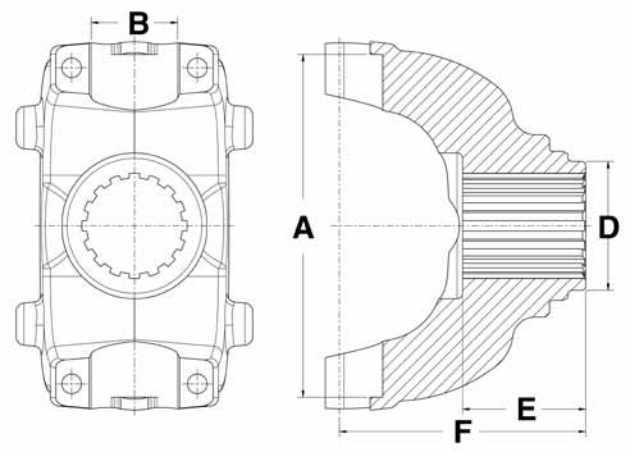
END YOKE

SPLINED - BEARING STRAP CONSTRUCTION



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1310HR Series A-3.219 B-1.063							
1310HR	1.209-27	1.52	—	1.48	3.06	—	**N2-4-2007-1X**
1350HR Series A-3.622 B-1.188							
1350HR	1.312-30	1.94	2.11	1.15	3.19	—	**N3-4-0880-1X**
1350HR	1.375-10	1.72	—	1.72	3.28	20.5	**N3-4-178X**
1350HR	1.375-10	1.72	—	1.72	3.28	20.5	**N3-4-2171-1**
1410HR Series A-4.187 B-1.188							
1410HR	1.500-10	1.81	—	2.00	3.72	24	**N3-4-6561-1**
1410HR	1.500-10	1.81	—	2.00	3.72	24	**N3-4-6631X**

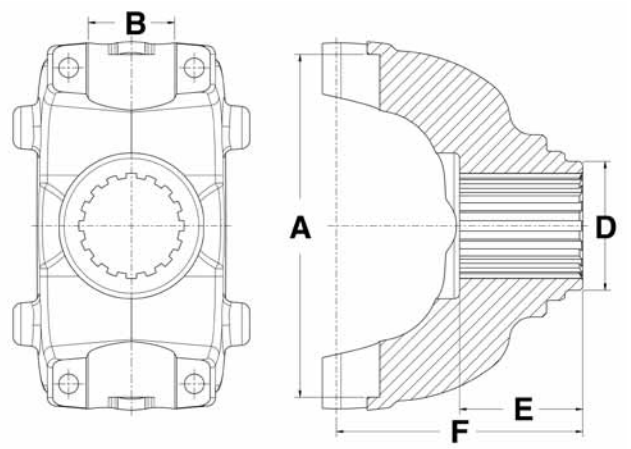
SPLINED - BEARING STRAP CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1550HR Series A-4.965 B-1.375							
1550HR	1.500-10	1.94	—	2.00	3.78	22	**N4-4-2051**
1610HR Series A-5.312 B-1.875							
1610HR	1.750-10	2.19	—	2.25	4.13	—	**N5-4-1721-1X**
1610HR	1.790-34	2.19	—	2.25	4.12	22	**N5-4-7171-1**
1610HR	2.000-39	2.31	—	2.31	4.88	—	**N5-4-6441-1X**
1710HR Series A-6.1902 B-1.938							
1710HR	1.960-10	2.82	—	3.00	5.00	—	**N6-4-1981-1**
1710HR	2.000-38	2.81	—	3.00	5.00	25	**N6-4-7141-1**
1710HR	2.000-39	3.00	—	2.31	5.16	28	**N6-4-7631-1X**
1710HR	2.000-39	3.00	—	2.31	5.16	28	**N6-4-7641-1X**
1710HR	2.000-39	3.00	—	2.31	6.25	—	**N6-4-6371-1**
1710HR	2.000-39	3.00	—	2.31	6.25	—	**N6-4-6391-1X**
1710HR	2.020-39	2.62	—	2.50	6.12	39.5	**N6-4-9001-1X**
1710HR	2.020-39	2.75	—	2.00	5.00	33.5	**N6-4-8331-1X**
1710HR	2.020-39	3.00	—	2.28	6.12	39.5	**N6-4-8991-1X**
1710HR	2.110-32	3.00	—	2.25	4.56	24	**N6-4-8681-1X**
1710HR	2.280-44	2.94	—	2.50	5.19	27	**N6-4-6041-1X**
1710HR	2.340-16	3.31	—	2.75	4.94	20	**N6-4-4601-1**
1710HR	2.380-46	3.25	—	2.32	5.38	—	**N6-4-7181-1X**
1710HR	2.390-46	2.88	—	2.75	4.94	20.5	**N6-4-7481-1**
1710HR	2.500-10	3.75	—	3.00	5.63	30	**N6-4-6921-1X**
1710HR	2.750-10	3.75	—	3.00	5.75	20	**N6-4-6931-1X**

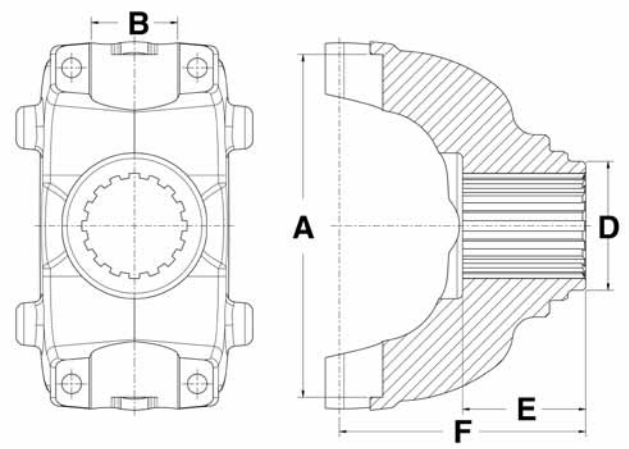
END YOKE

SPLINED - BEARING STRAP CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1760HR Series A-7.094 B-1.938							
1760HR	2.000-39	3.00	—	2.31	5.19	30	**N6.3-4-541-1X**
1760HR	2.110-32	3.00	—	2.25	5.00	30.5	**N6.3-4-1521-1X**
1760HR	2.270-44	3.00	—	2.50	5.25	30	**N6.3-4-5221-1X**
1760HR	2.280-44	2.94	—	2.50	5.25	26	**N6.3-4-331-1X**
1760HR	2.340-16	2.88	—	2.75	5.50	30	**N6.3-4-161-1**
1760HR	2.380-46	3.25	—	2.32	5.06	—	**N6.3-4-1041-1X**
1760HR	2.380-46	3.31	—	2.75	5.50	30	**N6.3-4-821-1**
1760HR	2.390-46	3.50	—	2.41	5.38	30	**N6.3-4-1391-1X**
1760HR	2.500-10	3.75	—	3.00	6.03	32	**N6.3-4-781-1X**
1760HR	2.750-10	3.75	—	3.00	5.97	30	**N6.3-4-791-1X**
1760HR	2.790-54	—	—	2.75	5.62	—	**N6.3-4-1681-1**

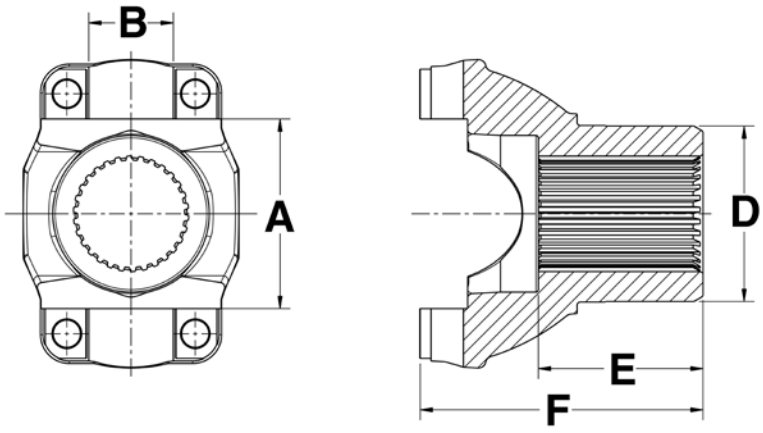
SPLINED - BEARING STRAP CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1810HR Series A-7.643 B-1.938							
1810HR	2.000-39	3.00	—	2.31	5.19	30	**N6.5-4-3381-1X**
1810HR	2.270-44	2.94	—	2.50	5.25	30	**N6.5-4-3281-1X**
1810HR	2.270-44	3.00	—	2.50	5.25	30	**N6.5-4-4571-1X**
1810HR	2.340-16	3.31	—	2.75	5.50	30	**N6.5-4-1891-1**
1810HR	2.380-46	3.25	—	2.32	5.16	—	**N6.5-4-3721-1**
1810HR	2.380-46	3.25	—	2.32	5.16	—	**N6.5-4-3731-1X**
1810HR	2.380-46	3.31	—	2.75	5.50	30	**N6.5-4-3591-1**
1810HR	2.380-46	3.38	—	3.00	6.02	30	**N6.5-4-3921-1X**
1810HR	2.500-10	3.75	—	3.00	5.88	30	**N6.5-4-3551-1X**
1810HR	2.750-10	3.75	—	3.00	6.06	30	**N6.5-4-3561-1X**
1810HR	2.790-54	—	—	2.75	5.62	30	**N6.5-4-4631-1**

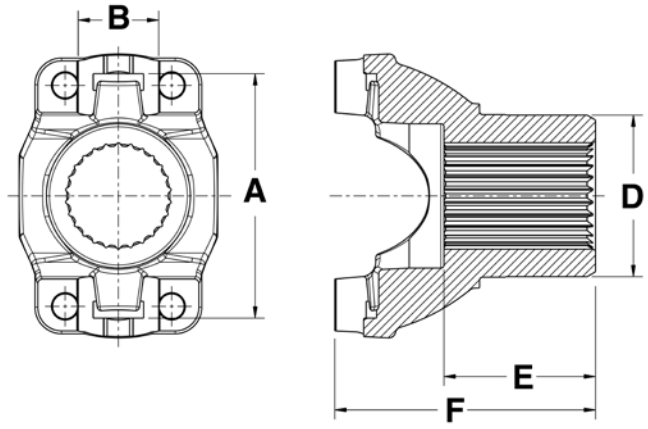
END YOKE

SPLINED - BEARING STRAP CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
3R Series A-3.563 B-1.125							
3R	1.209-27	1.52	1.69	1.48	3.34	—	**N3R-4-5850-1X**
3R	1.209-27	1.52	1.69	1.48	3.34	—	**N3R-4-6699-1X**
3R	1.312-30	1.94	—	1.15	3.12	—	**N3R-4-8336-1X**
3R	1.312-30	1.94	2.11	1.15	3.12	—	**N3R-4-0876-1X**

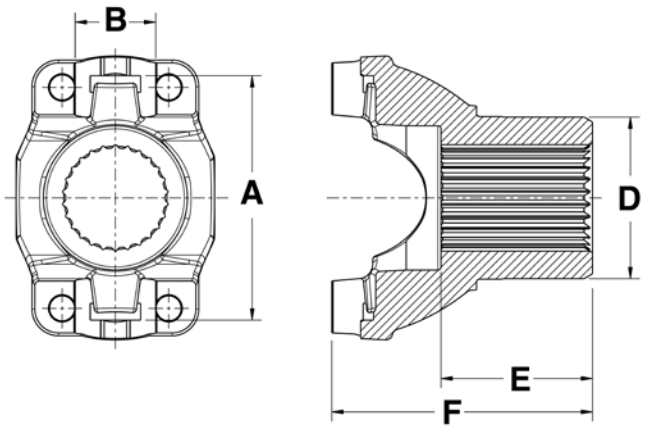
SPLINED - U-BOLT CONSTRUCTION



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1310HR Series A-3.219 B-1.063							
1310HR	1.125-10	1.55	—	1.50	3.00	25	**N2-4-2791**
1310HR	1.146-26	1.55	—	1.50	3.00	22.5	**N2-4-8091X**
1310HR	1.235-28	1.81	—	2.42	4.03	25	**N2-4-FD01X**
1310HR	1.250-10	2.00	—	1.75	3.28	30	**N2-4-4471X**
1310HR	1.250-24	1.88	—	1.50	3.00	22	**N2-4-JK02**
1310HR	1.276-29	1.88	—	1.50	2.94	18	**N2-4-3801X**
1310HR	1.312-30	1.94	—	1.15	3.16	20	**N2-4-GM03X**
1310HR	1.328-30	1.74	—	1.19	2.59	25	**N2-4-GM01X**
1310HR	1.401-32	1.94	—	2.00	3.44	22	**N2-4-JK01**
1310HR	1.401-32	2.12	—	2.00	3.44	22	**N2-4-4191**
1330HR Series A-3.622 B-1.063							
1330HR	1.235-28	1.81	—	2.42	4.03	25	**N2-4-FD02X**
1330HR	1.328-30	1.74	—	1.19	2.70	25	**N2-4-GM02X**
1350HR Series A-3.622 B-1.188							
1350HR	1.250-24	1.88	—	1.50	3.10	—	**N3-4-JK04**

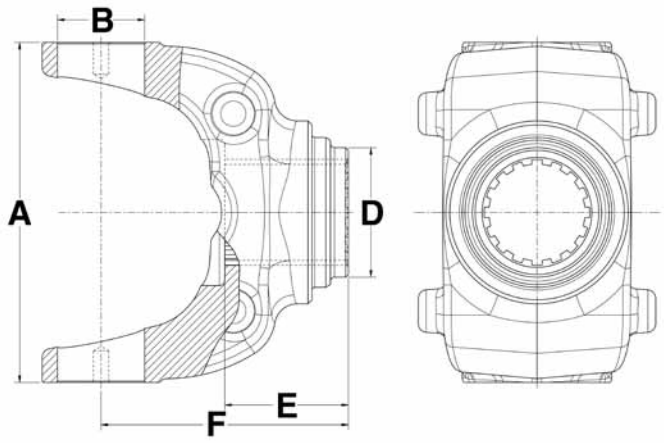
END YOKE

SPLINED - CV CONSTRUCTION



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1310HR Series A-3.219 B-1.063							
1310HR	1.125-10	1.55	—	1.50	3.00	13	**N2-4-4061X**
1310HR	1.146-26	1.55	—	1.50	3.00	13	**N2-4-4341**
1310HR	1.401-32	1.88	—	2.00	3.88	13	**N2-4-5341**
1310HR	1.401-32	1.94	—	2.00	3.84	13	**N2-4-JK03**

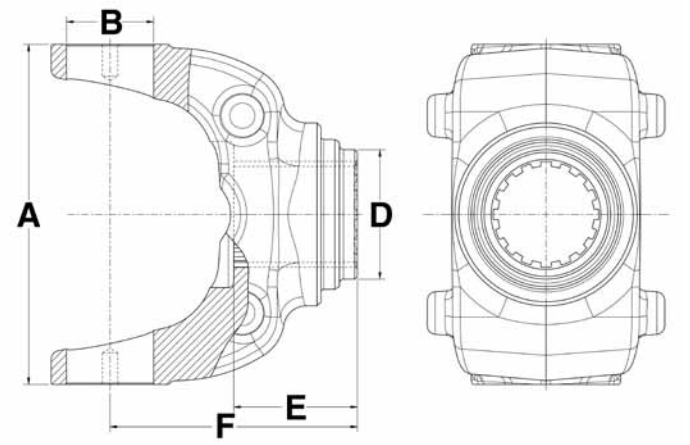
SPLINED - BEARING PLATE CONSTRUCTION



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1610 Series A-5.312 B-1.875							
1610	1.750-10	2.19	—	2.25	4.12	24	**N5-4-1721**
1610	1.750-10	2.62	—	2.25	5.34	28/32	**N5-4-4461**
1610	1.750-10	2.75	—	2.25	4.75	25/27	**N5-4-3601X**
1610	1.750-10	2.75	—	2.25	5.00	25/31	**N5-4-3621**
1610	1.750-10	2.75	—	2.25	5.41	28/32	**N5-4-4491X**
1610	1.962-10	3.00	—	2.25	5.38	35	**N5-4-4541**
1610	1.964-10	2.50	—	2.00	5.22	35	**N5-4-4551**
1610	2.000-30	3.00	—	2.69	6.00	45	**N5-4-5721**
1610	2.000-39	3.00	—	2.31	6.22	45	**N5-4-6241**
1610	2.000-39	3.00	—	2.31	6.22	45	**N5-4-6291X**
1610	2.130-32	3.00	—	2.25	5.38	36	**N5-4-5751**
1610	2.130-32	3.00	—	2.25	6.00	33	**N5-4-5731**
1710 Series A-6.094 B-1.938							
1710	1.750-10	2.75	—	2.25	4.88	30	**N6-4-2381**
1710	1.750-10	2.75	—	2.25	6.25	45	**N6-4-4091**
1710	1.750-34	2.50	—	2.25	4.88	30	**N6-4-5131X**
1710	1.750-34	2.50	—	2.25	4.88	30	**N6-4-6331**
1710	1.780-34	2.56	—	2.75	7.19	33	**N6-4-5041X**
1710	1.780-34	2.62	—	2.44	5.44	33.5	**N6-4-6481**
1710	1.780-34	2.62	—	2.44	6.31	45	**N6-4-6451**
1710	1.790-34	2.62	—	2.44	5.44	34	**N6-4-8511X**
1710	1.960-10	2.62	—	2.00	5.00	25/33	**N6-4-2391**
1710	1.960-10	2.75	—	2.62	5.25	30	**N6-4-3221**

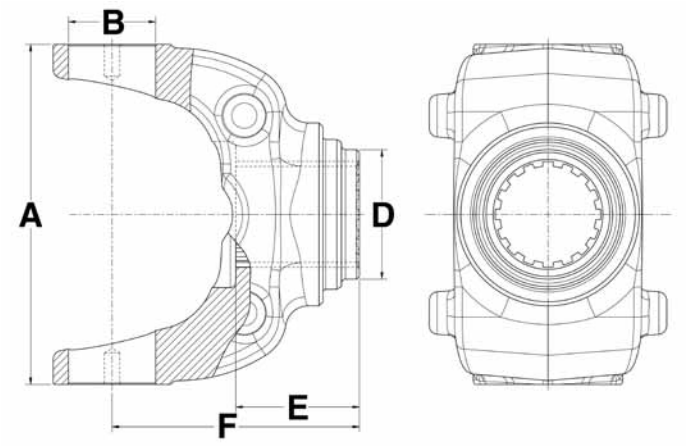
END YOKE

SPLINED - BEARING PLATE CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1710 Series A-6.094 B-1.938 (Cont'd)							
1710	1.960-10	2.81	—	3.00	5.00	21/32	**N6-4-1981**
1710	1.962-10	2.62	—	2.25	5.25	32	**N6-4-5151X**
1710	2.000-10	2.94	—	2.57	5.20	25	**N6-4-3241**
1710	2.000-10	2.94	—	2.57	5.20	25	**N6-4-4291X**
1710	2.000-10	2.94	—	2.57	5.20	25	**N6-4-4741X**
1710	2.000-30	3.00	—	2.69	6.11	45	**N6-4-5781**
1710	2.020-39	2.62	—	2.25	5.25	33.5	**N6-4-5991**
1710	2.020-39	2.62	—	2.25	5.25	33.5	**N6-4-6001X**
1710	2.024-39	2.62	—	2.25	5.25	—	**N6-4-8531X**
1710	2.024-39	2.62	—	2.25	6.12	45	**N6-4-6021X**
1710	2.024-39	2.75	—	2.44	4.81	26	**N6-4-6941X**
1710	2.024-39	2.75	—	2.44	5.25	30	**N6-4-6951X**
1710	2.024-39	2.75	—	2.44	6.50	30	**N6-4-5501**
1710	2.024-39	2.75	—	2.44	6.50	30	**N6-4-6871X**
1710	2.024-39	3.00	—	2.31	5.16	28	**N6-4-6401**
1710	2.024-39	3.00	—	2.31	5.16	28	**N6-4-6411X**
1710	2.024-39	3.00	—	2.31	5.16	28	**N6-4-6421X**
1710	2.024-39	3.00	—	2.31	6.25	45	**N6-4-6371**
1710	2.024-39	3.00	—	2.31	6.25	45	**N6-4-6391X**
1710	2.031-10	2.75	—	2.00	5.00	25	**N6-4-3791**
1710	2.113-32	3.00	—	2.25	6.25	45	**N6-4-5791**
1710	2.143-41	2.94	—	2.50	6.12	42.5	**N6-4-7561X**
1710	2.143-41	2.94	—	3.00	6.63	—	**N6-4-7541**
1710	2.225-6	3.00	—	3.25	5.31	26	**N6-4-3041X**

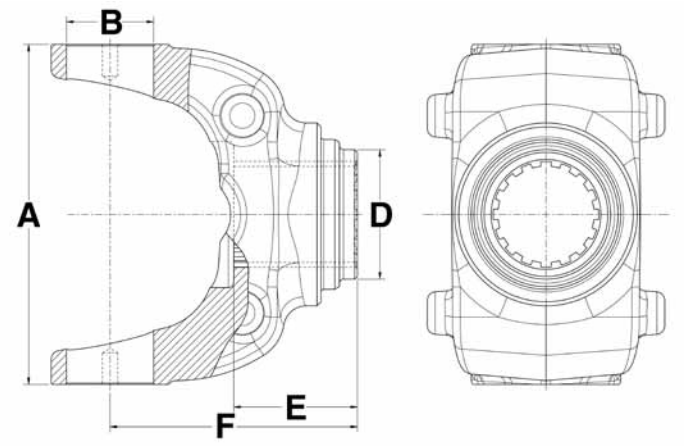
SPLINED - BEARING PLATE CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1710 Series A-6.094 B-1.938 (Cont'd)							
1710	2.250-10	3.00	—	3.00	6.06	32	**N6-4-1991**
1710	2.250-10	3.50	—	3.00	5.25	22	**N6-4-2141**
1710	2.274-44	2.94	—	2.50	5.19	27	**N6-4-6041X**
1710	2.280-44	2.94	—	2.50	5.19	—	**N6-4-8551X**
1710	2.340-16	2.88	—	2.75	4.94	26	**N6-4-4601**
1710	2.340-16	2.88	—	2.75	4.94	26	**N6-4-5071X**
1710	2.360-18	3.50	—	3.38	5.75	26	**N6-4-4561**
1710	2.380-36	3.00	—	2.69	5.44	26	**N6-4-5711**
1710	2.380-46	3.25	—	2.32	5.38	31	**N6-4-7181X**
1710	2.380-46	3.25	—	2.32	6.50	31	**N6-4-7771X**
1710	2.380-46	3.25	—	2.62	5.69	31	**N6-4-5461X**
1710	2.500-10	2.94	—	3.00	5.62	22/30	**N6-4-3611**
1710	2.500-10	2.94 / 3.75	—	3.00	5.62	30	**N6-4-6921**
1710	2.750-10	3.50	—	3.00	5.75	22	**N6-4-4551**
1710	2.750-10	3.75	—	3.00	5.75	20.5	**N6-4-6841X**
1710	2.750-10	3.75	—	3.00	5.75	22	**N6-4-6931X**

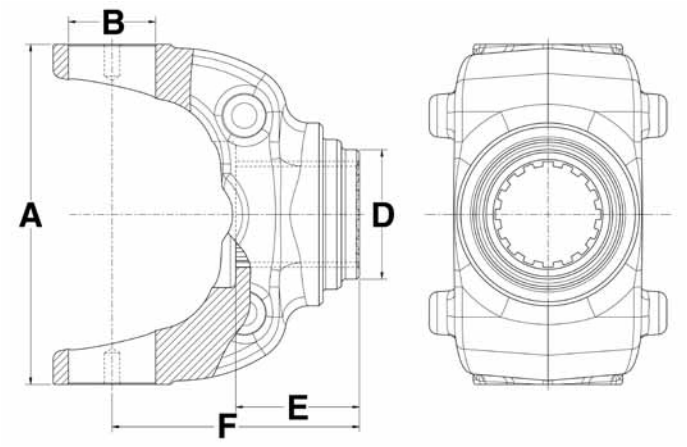
END YOKE

SPLINED - BEARING PLATE CONSTRUCTION (Cont'd)



DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1760 Series A-7.000 B-1.938							
1760	2.000-39	3.00	—	2.31	5.19	29	**N6.3-4-531**
1760	2.000-39	3.00	—	2.31	5.19	29	**N6.3-4-541X**
1760	2.280-44	3.00	—	2.50	5.25	—	**N6.3-4-5221X**
1760	2.340-16	2.86	—	2.75	5.50	30	**N6.3-4-161**
1760	2.380-46	2.95	—	2.41	5.41	30	**N6.3-4-641**
1760	2.380-46	3.25	—	2.32	5.06	29	**N6.3-4-1041X**
1760	2.380-46	3.50	—	2.41	5.38	30	**N6.3-4-391**
1760	2.410-44	3.00	—	2.50	5.25	30	**N6.3-4-331X**
1760	2.500-10	3.75	—	3.00	6.03	32	**N6.3-4-781X**
1760	2.750-10	3.75	—	3.00	5.97	30	**N6.3-4-791X**

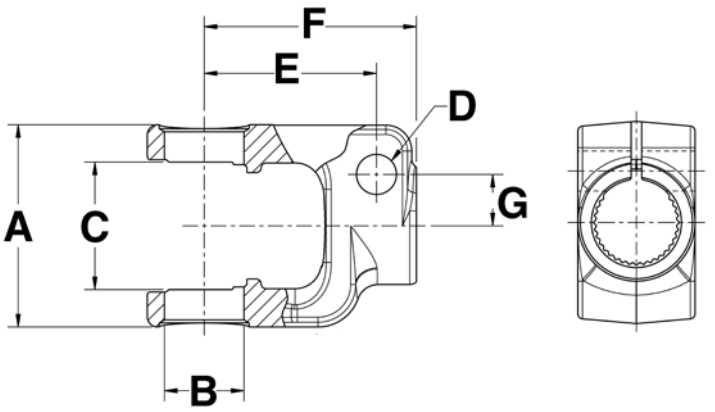
SPLINED - BEARING PLATE CONSTRUCTION (Cont'd)



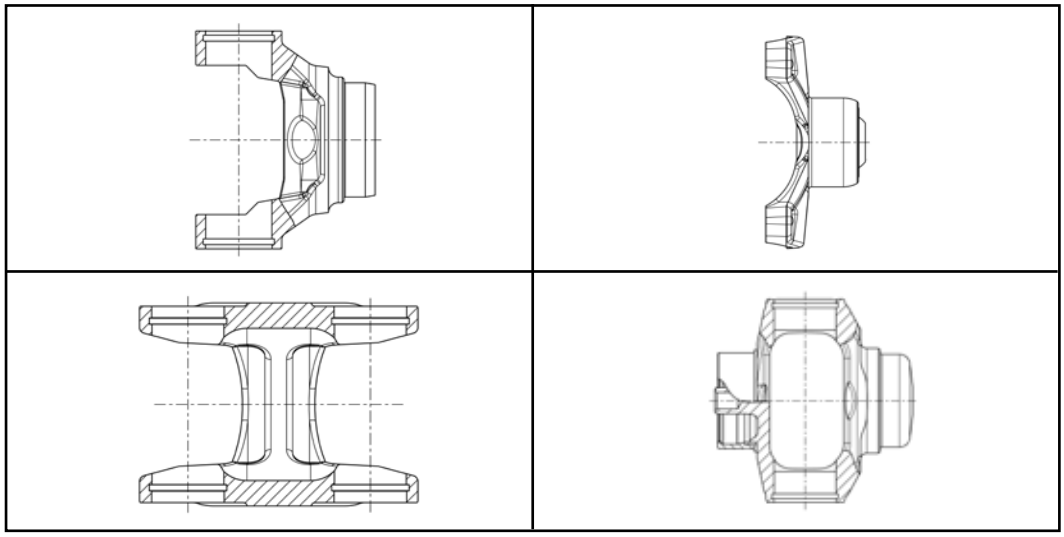
DL Series	Spline / Number Teeth	D Hub Dia.	Sleeve Dia.	E Length Through Bore	F CL To End Of Hub	Joint Angle	Part Number
1810 Series A-7.547 B-1.938							
1810	2.000-39	3.00	—	2.31	5.19	30	**N6.5-4-3381X**
1810	2.220-6	3.00	—	3.25	6.00	30	**N6.5-4-2271X**
1810	2.280-44	2.94	—	2.50	5.25	30	**N6.5-4-3281X**
1810	2.340-16	2.88	—	2.75	5.50	30	**N6.5-4-1891**
1810	2.340-16	2.88	—	2.75	5.50	30	**N6.5-4-2531X**
1810	2.380-36	3.00	—	2.69	5.44	30	**N6.5-4-3161**
1810	2.380-46	2.95	—	2.41	5.22	30	**N6.5-4-3441**
1810	2.380-46	3.25	—	2.32	5.16	—	**N6.5-4-3731X**
1810	2.380-46	3.25	—	2.62	5.44	30	**N6.5-4-2701**
1810	2.380-46	3.25	—	2.62	5.44	30	**N6.5-4-2711X**
1810	2.380-46	3.25	—	2.88	5.69	30	**N6.5-4-3221X**
1810	2.380-46	3.31	—	2.75	5.50	—	**N6.5-4-3591**
1810	2.380-46	3.38	—	3.20	6.00	30	**N6.5-4-3921X**
1810	2.380-46	3.50	—	2.41	5.41	30	**N6.5-4-3251**
1810	2.500-10	3.75	—	3.00	5.88	30	**N6.5-4-3551X**
1810	2.750-10	3.38	—	2.94	6.00	30	**N6.5-4-2171**
1810	2.750-10	3.75	—	3.00	6.06	30	**N6.5-4-3561X**

END YOKE

SPLINED - STEERING CLAMP



DL Series	Spline / Number Teeth	D Bolt Hole Dia.	E CL Of Bearing Cap To CL Of Bolt Hole	G CL Of Spline To CL Of Bolt Hole	F CL To End Of Hub	Part Number
1000STR Series A-2.312 B-0.938 C-1.500						
1000STR	0.822-18/36 w/D flat	0.46	2.03	0.54	2.25	**10-4841**
1000STR	0.822-18/36 w/D flat	0.47	2.03	0.61	2.50	**10-4731**
1000STR	1.011-26/36	0.41	1.78	0.60	2.25	**10-4121**
1000STR	1.011-26/36	0.41	2.03	0.60	2.50	**10-4961**

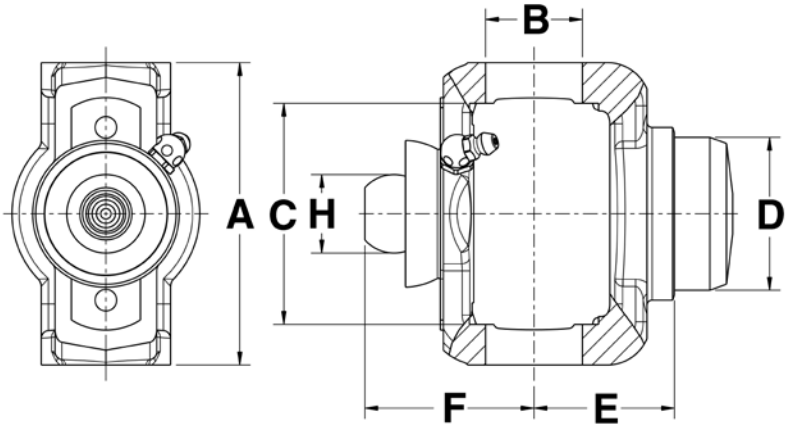


5 Center & Tube Weld Yoke

- C.V. Ball Stud Tube Yoke
- C.V. Centering Yoke
- Center Yoke (“H” Yoke)
- Inside Lock-Up
- Outside Lock-Up
- Bearing Plate Construction

CENTER & TUBE WELD YOKE

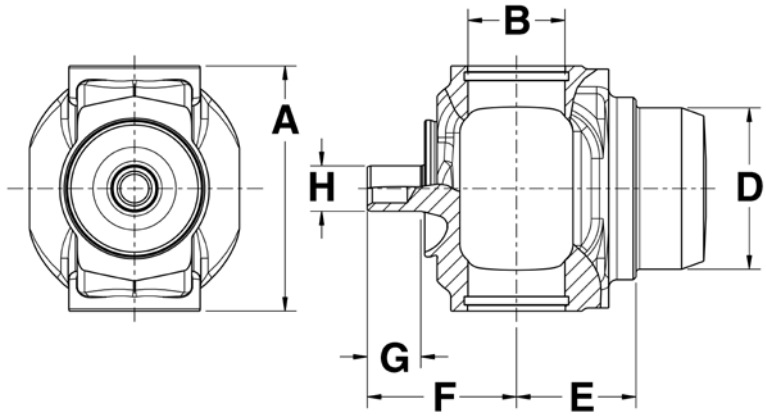
C.V. BALL STUD TUBE WELD YOKE - INSIDE LOCK-UP



DL Series	Tubing Dia. And Wall	D Butt Dia.	E CL To Point Of Weld	F CL To End Of Ball Stud	G Ball Stud Length	H Ball Stud Dia.	Joint Angle (Max)	Flinger/ Boot Part Number	Part Number
3R Series A-3.563 B-1.125 C-2.563									
3R	1.250X.120	1.02	1.62	1.98	—	0.91	8.5	—	**N3R-28-053**
3R	2.000X.120	1.77	1.62	1.98	—	0.91	8.5	—	**N3R-28-869**
3R	2.750X.065	2.63	1.62	1.98	—	0.91	8.5	—	**N3R-28-341**

CENTER & TUBE WELD YOKE

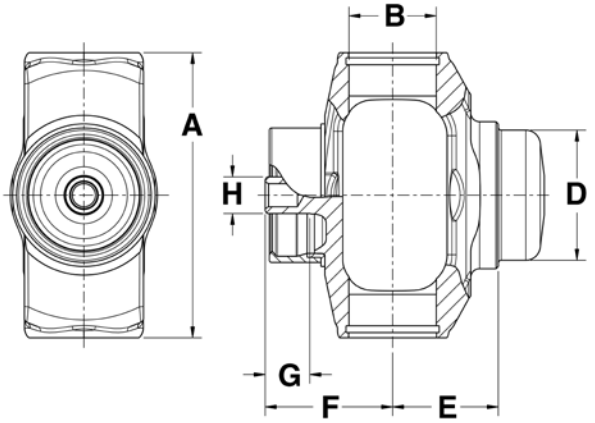
C.V. BALL STUD TUBE WELD YOKE - OUTSIDE LOCK-UP



DL Series	Tubing Dia. And Wall	D Butt Dia.	E CL To Point Of Weld	F CL To End Of Ball Stud	G Ball Stud Length	H Ball Stud Dia.	Joint Angle (Max)	Flinger/ Boot Part Number	Part Number
1210 Series A-2.688 B-1.063									
1210	1.250x.188	0.88	1.41	1.64	0.60	0.50	10.5	N230933	**N2-28-1290X**
1210	2.000x.120	1.77	1.31	1.64	0.60	0.50	10.5	N230933	**N2-28-2467X**
1210	2.500x.065	2.38	1.31	1.64	0.60	0.50	10.5	N230933	**N2-28-2407X**
1310 Series A-3.469 B-1.063									
1310	1.250x.120	1.02	1.44	1.64	0.60	0.50	13	—	**N2-28-2997X**
1310	1.750x.095	1.57	1.44	1.64	0.60	0.50	13	—	**N2-28-2937X**
1310	2.000X.120	1.77	1.44	1.64	0.60	0.50	13	—	**N2-28-2947X**
1310	2.500x.083	2.34	1.44	1.64	0.60	0.50	13	—	**N2-28-2957X**
1310	2.750x.065	2.63	1.44	1.64	0.60	0.50	13	—	**N2-28-2987X**
1310	2.750x.083	2.59	1.44	1.64	0.60	0.50	13	—	**N2-28-3817X**
1310	3.000x.065	2.88	1.44	1.64	0.60	0.50	13	—	**N2-28-2967X**
1310	3.000x.083	2.84	1.44	1.64	0.60	0.50	13	—	**N2-28-2977X**
1330 Series A-3.875 B-1.063									
1330	2.000x.120	1.77	1.38	1.66	0.60	0.50	13	N231259	**N2-28-2157X**
1330	2.500x.083	2.34	1.38	1.66	0.60	0.50	13	N231259	**N2-28-2137X**
1330	3.000x.065	2.88	1.50	1.66	0.60	0.50	13	N231259	**N2-28-2117X**

CENTER & TUBE WELD YOKE

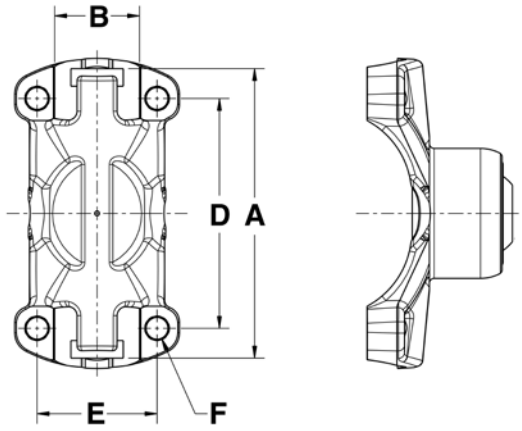
C.V. BALL STUD TUBE WELD YOKE - EXTENDED LUBE



DL Series	Tubing Dia. And Wall	D Butt Dia.	E CL To Point Of Weld	F CL To End Of Ball Stud	G Ball Stud Length	H Ball Stud Dia.	Joint Angle (Max)	Flinger/ Boot Part Number	Part Number
1310 Series A-3.469 B-1.063									
1310	1.250X.120	1.02	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2807X**
1310	1.750X.095	1.57	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2827X**
1310	2.000X.120	1.77	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2867X**
1310	2.500X.065	2.38	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-3087X**
1310	2.500X.083	2.34	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2887X**
1310	2.750X.065	2.63	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2747X**
1310	3.000X.065	2.88	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2907X**
1310	3.000X.083	2.84	1.44	1.64	0.60	0.50	13	N2-86-418	**N2-28-2927X**
1330 Series A-3.875 B-1.063									
1330	2.000X.120	1.77	1.38	1.66	0.60	0.50	9	N2-86-418	**N2-28-3257X**
1330	2.500X.083	2.34	1.38	1.66	0.60	0.50	9	N2-86-418	**N2-28-3067X**
1330	2.500X.095	2.32	1.38	1.66	0.60	0.50	9	N2-86-418	**N2-28-3277X**
1330	3.000X.083	2.84	1.38	1.66	0.60	0.50	9	N2-86-418	**N2-28-3447X**
1350 Series A-3.875 B-1.188									
1350	2.000X.120	1.77	1.44	1.73	0.60	0.50	15	N2-86-418	**N3-28-2947X**
1350	2.500X.095	2.32	1.44	1.73	0.60	0.50	15	N2-86-418	**N3-28-3281X**
1350	2.750X.083	2.59	1.47	1.73	0.60	0.50	15	N2-86-418	**N3-28-1747-1X**
1350	3.000X.083	2.84	1.47	1.73	0.60	0.50	15	N2-86-418	**N3-28-1327-1X**
1350	3.500X.083	3.34	1.50	1.73	0.60	0.50	15	N2-86-418	**N3-28-1527-1X**

CENTER & TUBE WELD YOKE

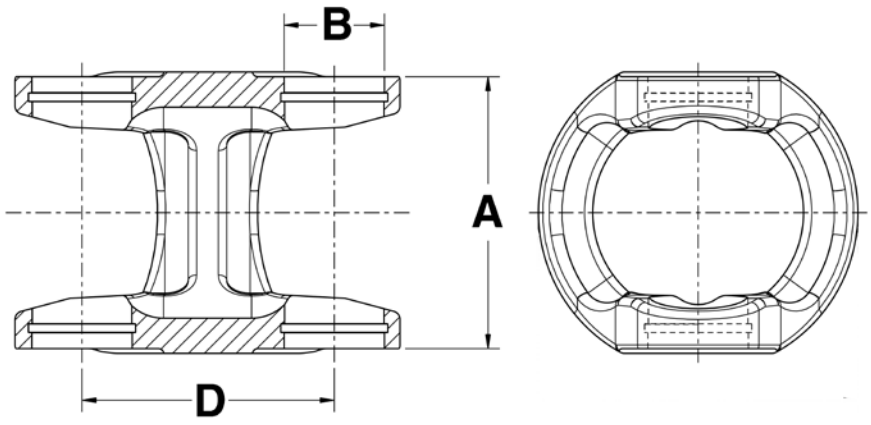
C.V. CENTERING YOKE



DL Series	D Bolt Hole Spacing Width	E Bolt Hole Spacing Length	F Hole/ Thread Size	Stud Socket Dimension	Part Number
1210HR Series A-2.438 B-1.063					
1210HR	2.34	1.50	0.25-28	0.50	**7-0042**
1310HR Series A-3.219 B-1.063					
1310HR	2.34	1.50	0.31-24	0.50	**7-0082**
1310HR	2.34	1.50	0.31-24	0.50	**7-0082NG**
1210HR Series A-3.622 B-1.063					
1330HR	2.88	1.50	0.31-24	0.50	**7-0079**
1330HR	2.88	1.50	0.31-24	0.50	**7-0079NG**
1330HR	2.88	1.50	0.31-24	0.62	**7-0041**
1350HR Series A-3.622 B-1.188					
1350HR	2.75	1.62	0.31-24	0.50	**N3-83-019X**

CENTER & TUBE WELD YOKE

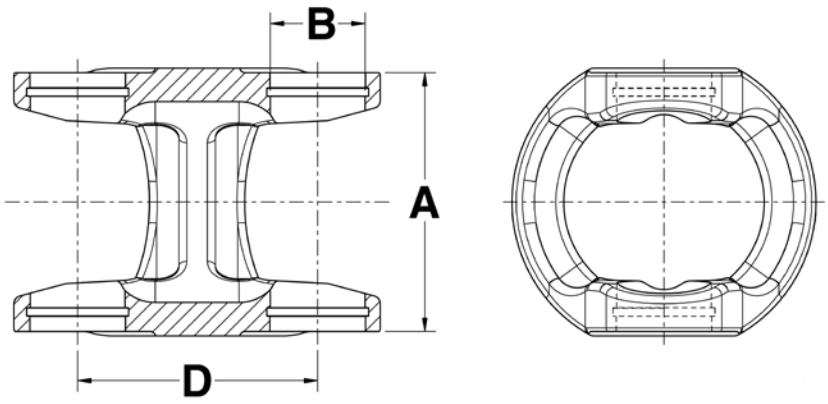
C.V. H YOKE - INSIDE LOCK-UP



DL Series	D Center To Center	Maximum Joint Angle	Part Number
3R Series A-3.563 B-1.125 C-2.563			
3R	3.25	17	**N3R-26-057**

CENTER & TUBE WELD YOKE

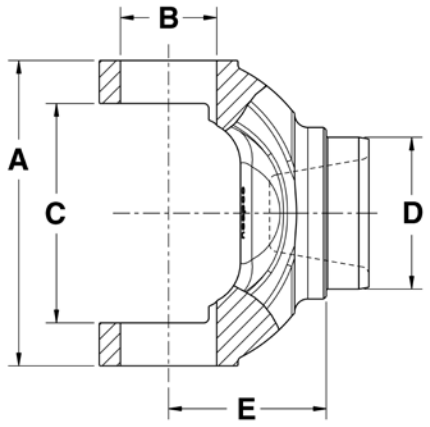
C.V. H YOKE - OUTSIDE LOCK-UP



DL Series	D Center To Center	Maximum Joint Angle	Part Number
1210 Series A-2.688 B-1.063			
1210	2.69	21	**N2-26-457**
1310 Series A-3.469 B-1.063			
1310	2.69	26	**N2-26-367**
1310	2.69	26	**N2-26-477**
1330 Series A-3.875 B-1.063			
1330	2.75	18	**N2-26-527**
1350 Series A-3.875 B-1.188			
1350	2.88	30	**N3-26-757**

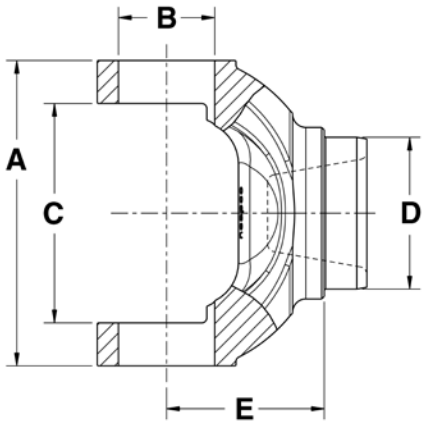
CENTER & TUBE WELD YOKE

TUBE WELD YOKE (Steel) - INSIDE LOCK-UP



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1000 Series A-2.312 B-0.938 C-1.500							
STEEL	1000	1.750X.065	1.62	SO	2.00	60	**10-2817**
STEEL	1000	2.000X.083	1.84	HO	2.16		**10-1005**
3R Series A-3.563 B-1.125 C-2.563							
STEEL	3R	2.000X.120	1.77	HO	1.84	—	**N3R-28-1757**
STEEL	3R	2.250X.154	1.96	HO	1.75	—	**N3R-28-551**
STEEL	3R	2.750X.065	2.62	HO	1.75	20	**N3R-28-307**
STEEL	3R	2.750X.088	2.58	HO	1.80	—	**N3R-28-309**
STEEL	3R	3.000X.065	2.88	HO	1.88	21.5	**N3R-28-327**
STEEL	3R	3.000X.083	2.84	HO	1.88	21.5	**N3R-28-437**
STEEL	3R	3.000X.095	2.82	HO	1.88	21.5	**N3R-28-157**
STEEL	3R	3.250X.065	3.12	HO	1.88	21.5	**N3R-28-325**
STEEL	3R	3.500X.065	3.38	HO	1.88	21.5	**N3R-28-397**
STEEL	3R	3.500X.083	3.34	HO	1.88	21.5	**N3R-28-427**
STEEL	3R	4.000X.065	3.88	HO	1.65	—	**N3R-28-021**
STEEL	3R	4.000X.083	3.84	HO	1.65	—	**N3R-28-477**
7290 Series A-3.563 B-1.126 C-2.625							
STEEL	7290	2.750X.065	2.62	HO	1.75	20	**N729-28-307**
STEEL	7290	3.000X.083	2.84	HO	1.88	21.5	**N729-28-437**
STEEL	7290	3.250X.065	3.38	HO	1.88	21.5	**N729-28-325**
STEEL	7290	3.500X.065	3.38	HO	1.88	21.5	**N729-28-397**
STEEL	7290	4.000X.065	3.88	HO	1.65	—	**N729-28-021**
STEEL	7290	4.000X.083	3.84	HO	1.65	—	**N729-28-477**

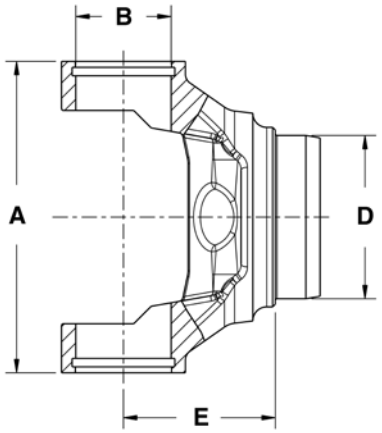
TUBE WELD YOKE (Aluminum) - INSIDE LOCK-UP



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
3R Series A-3.563 B-1.125 C-2.563							
ALUMINUM	3R	3.000X.083	2.84	HO	2.27	—	**N3R-28-3008**
ALUMINUM	3R	3.000X.125	2.76	HO	2.27	—	**N3R-28-3012**
ALUMINUM	3R	3.500X.125	3.26	HO	2.16	—	**N3R-28-3512**
ALUMINUM	3R	4.000X.083	3.84	HO	2.16	—	**N3R-28-4008**
ALUMINUM	3R	4.000X.125	3.76	HO	2.16	—	**N3R-28-4012**

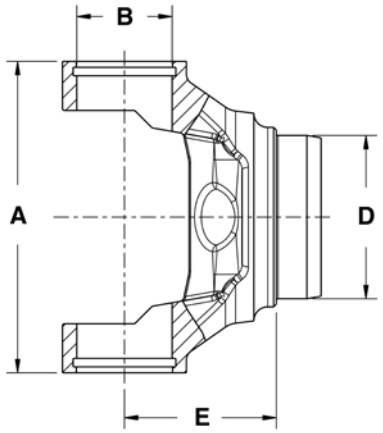
CENTER & TUBE WELD YOKE

TUBE WELD YOKE (Steel) - OUTSIDE LOCK-UP



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1210 Series A-2.688 B-1.063							
STEEL	1210	2.000X.083	1.84	HO	1.50	20	**N2-28-2417**
STEEL	1210	2.500X.065	2.38	HO	1.31	20	**N2-28-1947**
1310 Series A-3.469 B-1.063							
STEEL	1310	1.250X.120	1.02	HO	2.12	30	**N2-26-347**
STEEL	1310	2.000X.065	1.88	HO	1.69	22	**N2-28-417**
STEEL	1310	2.000X.083	1.84	HO	1.69	22	**N2-28-357**
STEEL	1310	2.000X.095	1.82	HO	1.69	22	**N2-28-577**
STEEL	1310	2.000X.120	1.77	HO	1.69	22	**N2-28-1757**
STEEL	1310	2.500X.065	2.38	HO	1.84	30	**N2-28-277**
STEEL	1310	2.500X.083	2.34	HO	1.84	30	**N2-28-367**
STEEL	1310	2.750X.065	2.62	HO	1.69	21.5	**N2-28-307**
STEEL	1310	2.750X.083	2.59	HO	1.69	21.5	**N2-28-1617**
STEEL	1310	3.000X.065	2.88	HO	1.69	21.5	**N2-28-327**
STEEL	1310	3.000X.083	2.84	HO	1.69	21.5	**N2-28-437**
STEEL	1310	3.500X.065	3.38	HO	1.69	21.5	**N2-28-397**
STEEL	1310	3.500X.083	3.34	HO	1.69	21.5	**N2-28-427**
STEEL	1310	4.000X.065	3.88	HO	1.62	21.5	**N2-28-021**
STEEL	1310	4.000X.083	3.84	HO	1.62	21.5	**N2-28-477**

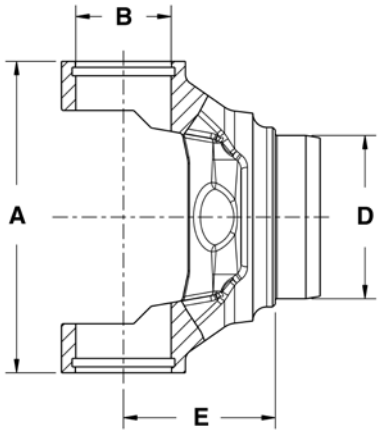
TUBE WELD YOKE (Steel) - OUTSIDE LOCK-UP (Cont'd)



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1330 Series A-3.875 B-1.063							
STEEL	1330	2.500X.083	2.34	HO	1.72	25	**N2-28-1707**
STEEL	1330	3.000X.065	2.88	HO	1.72	25	**N2-28-1177**
STEEL	1330	3.000X.083	2.84	HO	1.72	25	**N2-28-1697**
STEEL	1330	3.500X.065	3.38	HO	1.81	—	**N2-28-1977**
STEEL	1330	3.500X.083	3.34	HO	1.81	—	**N2-28-1717**
STEEL	1330	4.000X.065	3.88	HO	1.69	22	**N2-28-023**
STEEL	1330	4.000X.083	3.84	HO	1.69	22	**N2-28-3637**
1350 Series A-3.875 B-1.188							
STEEL	1350	2.500X.083	2.34	HO	1.94	20	**N3-28-47**
STEEL	1350	2.750X.065	2.62	HO	2.00	20	**N3-28-57-2**
STEEL	1350	2.750X.095	2.56	HO	2.00	20	**N3-28-57-1**
STEEL	1350	3.000X.083	2.84	HO	2.00	20	**N3-28-57**
STEEL	1350	3.500X.065	3.38	HO	1.81	20	**N3-28-257**
STEEL	1350	3.500X.083	3.34	HO	1.81	20	**N3-28-427**
STEEL	1350	4.000X.065	3.88	HO	1.69	22	**N3-28-025**
STEEL	1350	4.000X.083	3.84	HO	1.69	22	**N3-28-417**
1410 Series A-4.438 B-1.188							
STEEL	1410	3.000X.083	2.84	HO	2.12	30	**N3-28-97**
STEEL	1410	3.500X.065	3.38	HO	2.12	30	**N3-28-367**
STEEL	1410	3.500X.083	3.34	HO	2.12	30	**N3-28-557**
STEEL	1410	4.000X.083	3.84	HO	1.88	22	**N3-28-457**

CENTER & TUBE WELD YOKE

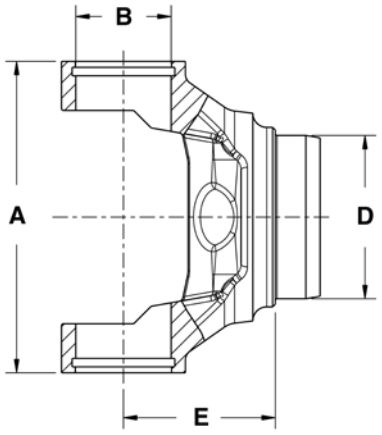
TUBE WELD YOKE (Steel) - OUTSIDE LOCK-UP (Cont'd)



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1480 Series A-4.438 B-1.375							
STEEL	1480	3.500X.083	3.34	HO	2.03	22	**N3-28-537**
STEEL	1480	3.500X.083	3.34	HO	2.31	35	**N3-28-547**
STEEL	1480	3.500X.095	3.31	HO	2.03	22	**N3-28-567**
STEEL	1480	3.500X.134	3.24	HO	2.31	35	**N3-28-548**
STEEL	1480	4.000X.083	3.84	HO	2.03	22.5	**N3-28-507**
1550 Series A-5.250 B-1.375							
STEEL	1550	3.500X.095	3.32	HO	2.19	22.5	**N4-28-307**
STEEL	1550	3.500X.095	3.32	HO	2.69	35	**N4-28-417**

CENTER & TUBE WELD YOKE

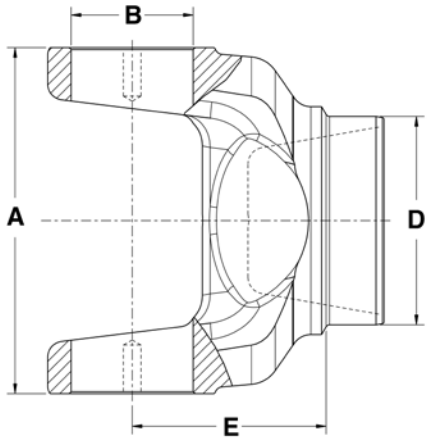
TUBE WELD YOKE (Aluminum) - OUTSIDE LOCK-UP



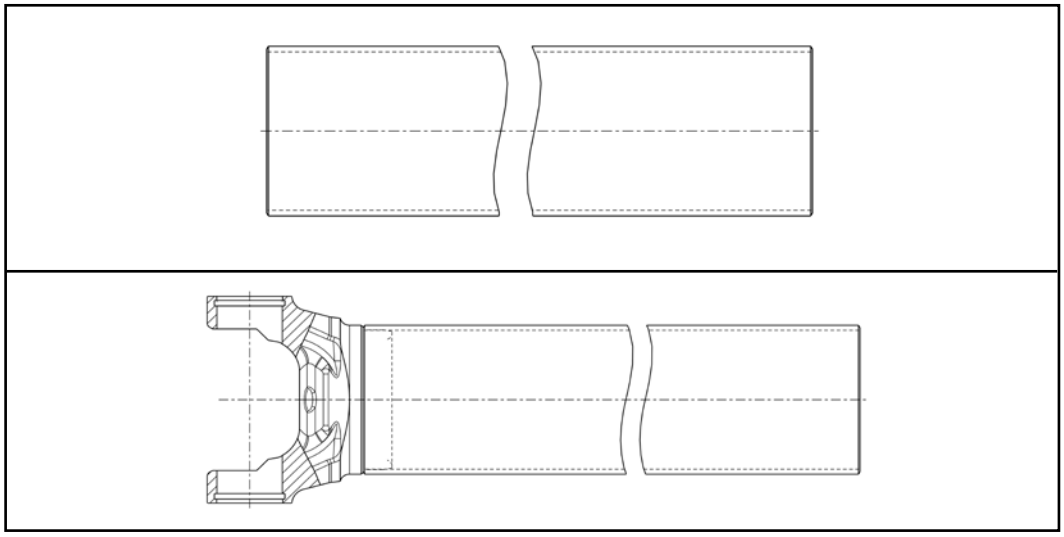
Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1310 Series A-3.469 B-1.063							
ALUMINUM	1310	3.000X.125	2.76	HO	2.03	—	**N31-28-3012**
ALUMINUM	1310	3.500X.125	3.26	HO	2.03	—	**N31-28-3512**
1330 Series A-3.875 B-1.063							
ALUMINUM	1330	3.000X.125	2.76	HO	2.27	—	**N33-28-3012**
ALUMINUM	1330	3.500X.125	3.26	HO	2.16	—	**N33-28-3512**
ALUMINUM	1330	4.000X.083	3.84	HO	2.16	—	**N33-28-4008**
ALUMINUM	1330	4.000X.125	3.76	HO	2.16	—	**N33-28-4012**
ALUMINUM	1330	4.180X.094	4.00	HO	2.16	—	**N33-28-4108**
1350 Series A-3.875 B-1.188							
ALUMINUM	1350	3.000X.125	2.76	HO	2.27	—	**N35-28-3012**
ALUMINUM	1350	3.500X.125	3.26	HO	2.16	—	**N35-28-3512**
ALUMINUM	1350	4.000X.083	3.84	HO	2.16	—	**N35-28-4008**
ALUMINUM	1350	4.000X.125	3.76	HO	2.16	—	**N35-28-4012**
ALUMINUM	1350	4.180X.094	4.00	HO	2.16	—	**N35-28-4108**

CENTER & TUBE WELD YOKE

TUBE WELD YOKE - BEARING PLATE CONSTRUCTION



Material	DL Series	Tubing Dia. And Wall	D Butt Dia.	Type Of Butt	E CL To Point Of Weld	Joint Angle	Part Number
1610 Series A-5.312 B-1.875							
STEEL	1610	3.500X.095	3.31	HO	3.00	35	**N5-28-167**
STEEL	1610	3.500X.134	3.25	HO	3.00	35	**N5-28-627**
STEEL	1610	3.500X.156	3.19	HO	3.00	35	**N5-28-207**
STEEL	1610	4.000X.134	3.75	HO	3.00	—	**N5-28-327**
1710 Series A-6.094 B-1.938							
STEEL	1710	3.500X.156	3.19	HO	3.03	22	**N6-28-137**
STEEL	1710	4.000X.134	3.75	HO	3.03	30/22.5	**N6-28-347**
STEEL	1710	4.500X.134	4.25	HO	3.03	22	**N6-28-407**
1760 Series A-7.000 B-1.938							
STEEL	1760	4.095X.180	3.75	HO	3.03	30	**N6.3-28-17**
1810 Series A-7.547 B-1.938							
STEEL	1810	4.500X.134	4.25	HO	3.38	30	**N6.5-28-117**
STEEL	1810	4.500X.259	4.00	HO	3.38	30	**N6.5-28-127**

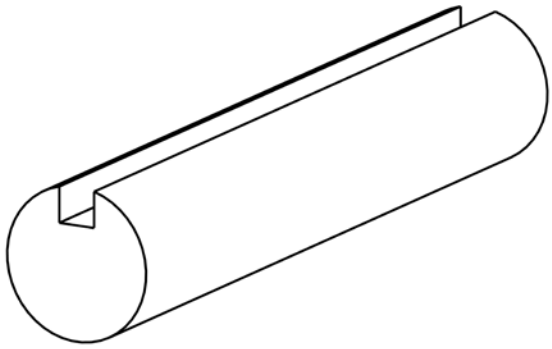


6 Shafting / Tubing / Yoke & Tube Assembly

- Solid Shafting
- Aux. / P.T.O. Shafting and Tubing
- Propeller Shaft Tubing
- Yoke and Tube Assembly

TUBING / YOKE & TUBE

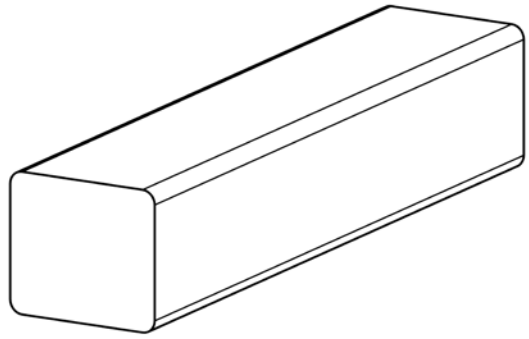
AUX/PTO SOLID SHAFT - ROUND



Shaft Type	Dimensions	Keyway Dimensions	Length In Inches	Part Number
Solid Round	0.750	0.19	72	**71-0750**
Solid Round	0.813	0.25	72	**71-0813**
Solid Round	0.875	0.25	72	**71-0875**
Solid Round	1.000	0.25	72	**71-1000**
Solid Round	1.250	0.31	72	**71-1250**

TUBING / YOKE & TUBE

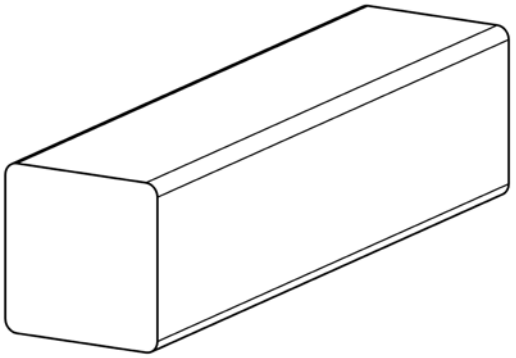
AUX/PTO SOLID SHAFT - RECTANGULAR



Shaft Type	Dimensions	Keyway Dimensions	Length In Inches	Part Number
Solid Rectangular	.750X.875	—	72	**73-0750**
Solid Rectangular	1.00x1.125	—	72	**73-1001**

TUBING / YOKE & TUBE

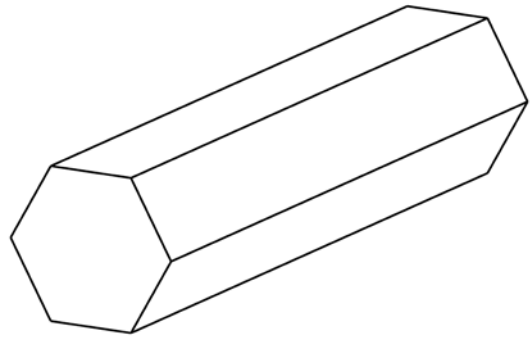
AUX/PTO SOLID SHAFT - SQUARE



Shaft Type	Dimensions	Keyway Dimensions	Length In Inches	Part Number
Solid Square	0.750	—	72	**72-0750**
Solid Square	0.875	—	72	**72-0875**
Solid Square	1.000	—	72	**72-1000**
Solid Square	1.188	—	72	**73-1188**
Solid Square	1.313	—	72	**73-1313**

TUBING / YOKE & TUBE

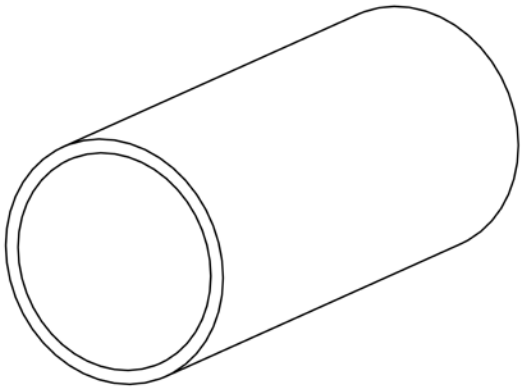
AUX/PTO SOLID SHAFT - HEXAGON



Shaft Type	Dimensions	Keyway Dimensions	Length In Inches	Part Number
Solid Hexagon	0.875	—	72	**72-0888**
Solid Hexagon	1.000	—	72	**72-1002**
Solid Hexagon	1.125	—	72	**72-1125**

TUBING / YOKE & TUBE

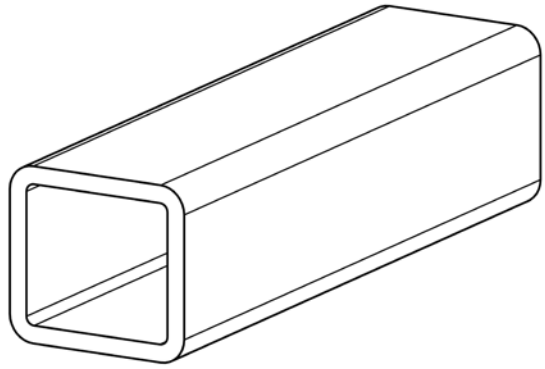
AUX/PTO TUBING - ROUND



Shaft Type	Outside Diameter	Wall Thickness	Length In Inches	Part Number
Tubing Round	1.62	0.065	72	70-1625
Tubing Round	2.00	0.083	72	70-2000
Tubing Round	2.12	0.120	72	70-2125
Tubing Round	2.25	0.120	72	70-2250
Tubing Round	2.50	0.134	72	70-2500
Tubing Round	2.75	0.109	72	70-2750

TUBING / YOKE & TUBE

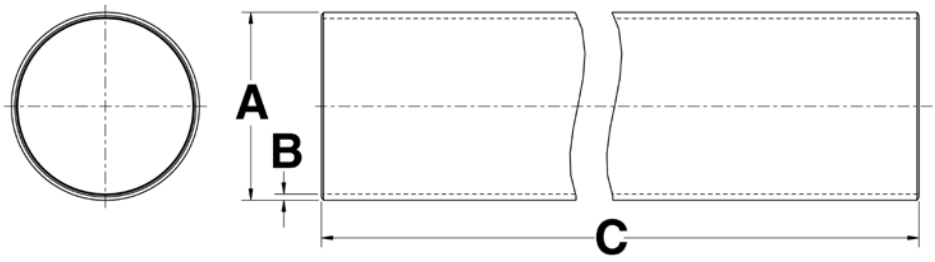
AUX/PTO TUBING - RECTANGULAR



Shaft Type	Outside Diameter	Wall Thickness	Length In Inches	Part Number
Tubing Rectangular	1.00 X 1.13	0.125	72	70-1001
Tubing Rectangular	1.25 X 1.38	0.130	72	70-1250

TUBING / YOKE & TUBE

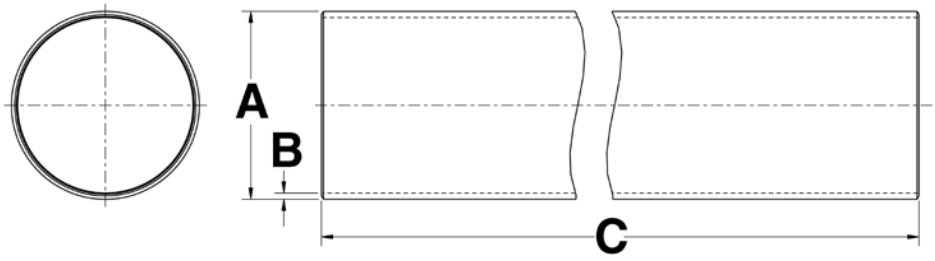
DRIVE SHAFT TUBING - STEEL



Material	A Outside Dia. 1	A* Outside Dia. 2	B Wall Thickness	C Length In Inches	Part Number
STEEL	1.25	—	0.120	108	**N10-32-92-108**
STEEL	1.25	—	0.120	72	**N10-32-92-72**
STEEL	2.00	—	0.065	108	**N16-30-32-108**
STEEL	2.00	—	0.065	72	**N16-30-32-72**
STEEL	2.00	—	0.083	108	**N16-30-62-108**
STEEL	2.00	—	0.083	72	**N16-30-62-72**
STEEL	2.00	—	0.095	72	**N16-30-42-72**
STEEL	2.00	—	0.120	108	**N16-30-102-108**
STEEL	2.00	—	0.120	72	**N16-30-102-72**
STEEL	2.50	—	0.065	108	**N20-30-12-108**
STEEL	2.50	—	0.065	72	**N20-30-12-72**
STEEL	2.50	—	0.083	108	**N20-30-22-108**
STEEL	2.50	—	0.083	72	**N20-30-22-72**
STEEL	2.50	—	0.095	108	**N20-30-52-108**
STEEL	2.75	—	0.065	108	**N22-30-12-108**
STEEL	2.75	—	0.065	72	**N22-30-12-72**
STEEL	2.75	—	0.083	108	**N22-30-22-108**
STEEL	2.75	—	0.083	72	**N22-30-22-72**
STEEL	3.00	—	0.065	108	**N24-30-32-108**
STEEL	3.00	—	0.065	72	**N24-30-32-72**
STEEL	3.00	—	0.083	108	**N24-30-42-108**
STEEL	3.00	—	0.083	72	**N24-30-42-72**
STEEL	3.00	—	0.095	108	**N24-30-12-108**
STEEL	3.00	—	0.095	72	**N24-30-12-72**
STEEL	3.25	—	0.065	108	**N26-30-12-108**

TUBING / YOKE & TUBE

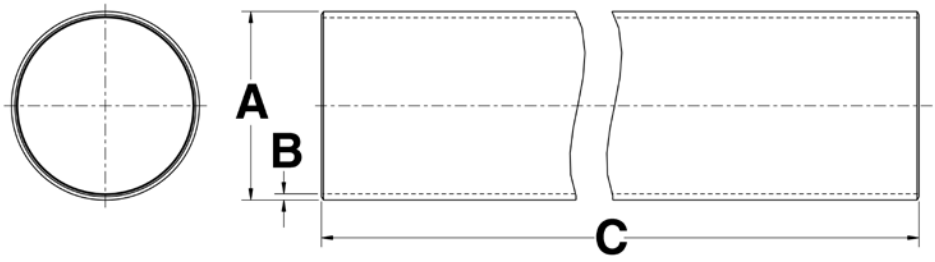
DRIVE SHAFT TUBING - STEEL (Cont'd)



Material	A Outside Dia. 1	A* Outside Dia. 2	B Wall Thickness	C Length In Inches	Part Number
STEEL	3.25	—	0.065	72	**N26-30-12-72**
STEEL	3.50	—	0.065	108	**N28-30-42-108**
STEEL	3.50	—	0.065	72	**N28-30-42-72**
STEEL	3.50	—	0.083	108	**N28-30-62-108**
STEEL	3.50	—	0.083	72	**N28-30-62-72**
STEEL	3.50	—	0.095	108	**N28-30-22-108**
STEEL	3.50	—	0.095	72	**N28-30-22-72**
STEEL	3.50	—	0.134	108	**N28-30-92-108**
STEEL	3.50	—	0.134	72	**N28-30-92-72**
STEEL	3.50	—	0.156	108	**N28-30-52-108**
STEEL	3.50	—	0.156	72	**N28-30-52-72**
STEEL	4.00	—	0.065	72	**T-143**
STEEL	4.00	—	0.083	108	**N32-30-22-108**
STEEL	4.00	—	0.083	72	**N32-30-22-72**
STEEL	4.00	—	0.134	108	**N32-30-52-108**
STEEL	4.00	—	0.134	72	**N32-30-52-72**
STEEL	4.10	—	0.180	108	**N32-30-72-108**
STEEL	4.10	—	0.180	72	**N32-30-72-72**
STEEL	4.50	—	0.134	108	**N36-30-62-108**
STEEL	4.50	—	0.134	72	**N36-30-62-72**
STEEL	4.50	—	0.259	108	**N36-30-22-108**
STEEL	4.50	—	0.259	72	**N36-30-22-72**
STEEL	4.59	—	0.180	108	**N36-30-102-108**
STEEL	4.59	—	0.180	72	**N36-30-102-72**

TUBING / YOKE & TUBE

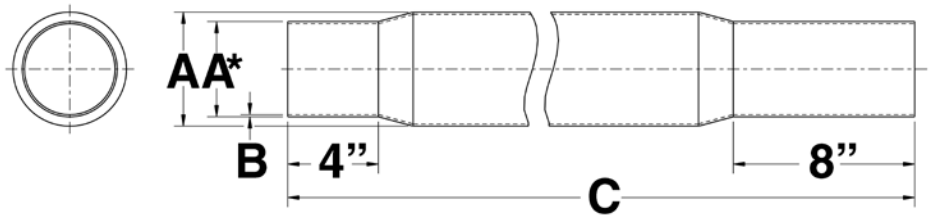
DRIVE SHAFT TUBING - ALUMINUM



Material	A Outside Dia. 1	A* Outside Dia. 2	B Wall Thickness	C Length In Inches	Part Number
ALUMINUM	3.00	—	0.083	36	**A24-30-42-36**
ALUMINUM	3.00	—	0.125	54	**A24-30-42-54**
ALUMINUM	3.50	—	0.125	58	**A28-30-42-58**
ALUMINUM	3.50	—	0.125	78	**A28-30-42-78**
ALUMINUM	4.00	—	0.125	69	**A32-30-42-69**

TUBING / YOKE & TUBE

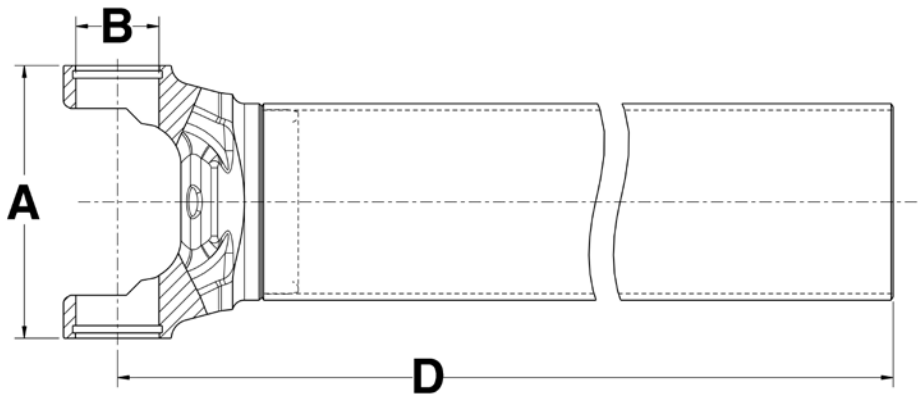
DRIVE SHAFT TUBING - ALUMINUM (Cont'd)



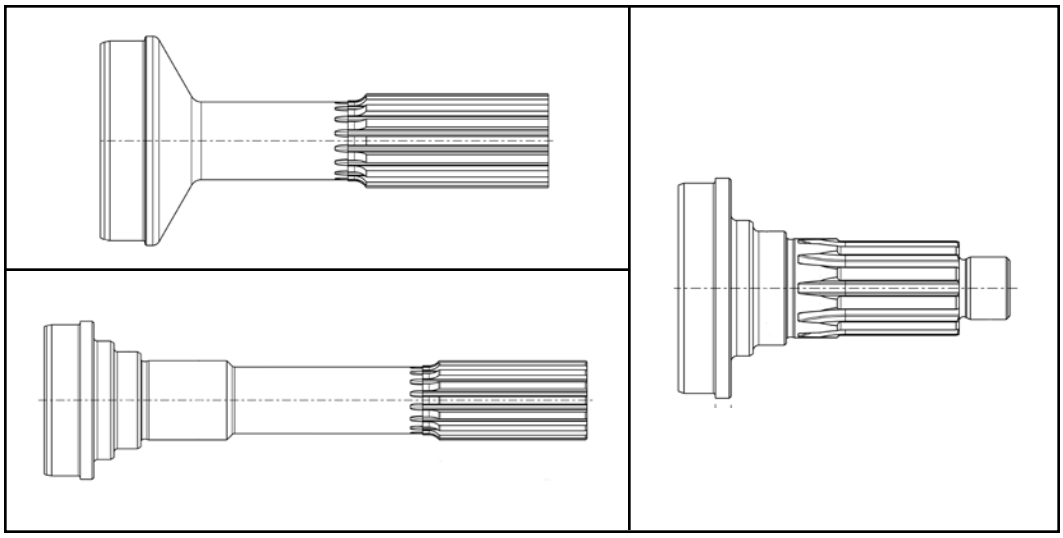
Material	A Outside Dia. 1	A* Outside Dia. 2	B Wall Thickness	C Length In Inches	Part Number
ALUMINUM	5.00	4.00	0.083	78	**A32-30-22-78S**

TUBING / YOKE & TUBE

YOKE & TUBE ASSEMBLY



DL Series	Diameter And Wall Thickness	D Center To End Of Tube	Part Number
1310 Series A-3.469 B-1.063			
1310	2.000X.083	49.44	N2-27-7-4724
1310	2.500X.065	61.84	N2-27-4-6000
1310	2.500X.083	49.84	N2-27-9-4800
1310	2.500X.083	62.38	N2-27-9-6017
1310	2.750X.065	54.16	N2-27-5-5215
1310	3.000X.083	49.69	N2-27-24-4800
1310	3.000X.083	61.69	N2-27-24-6000
1310	3.500X.065	73.69	N2-27-10-7200
1330 Series A-3.875 B-1.063			
1330	3.000X.083	61.72	N2-27-30-6000
1330	3.500X.083	73.81	N2-27-35-7200
1350 Series A-3.875 B-1.188			
1350	3.000X.083	66.00	N3-27-2-6400
1410 Series A-4.438 B-1.188			
1410	3.000X.083	65.03	N3-27-3-6229
1480 Series A-4.438 B-1.375			
1480	3.500X.083	63.34	N3-27-22-6110

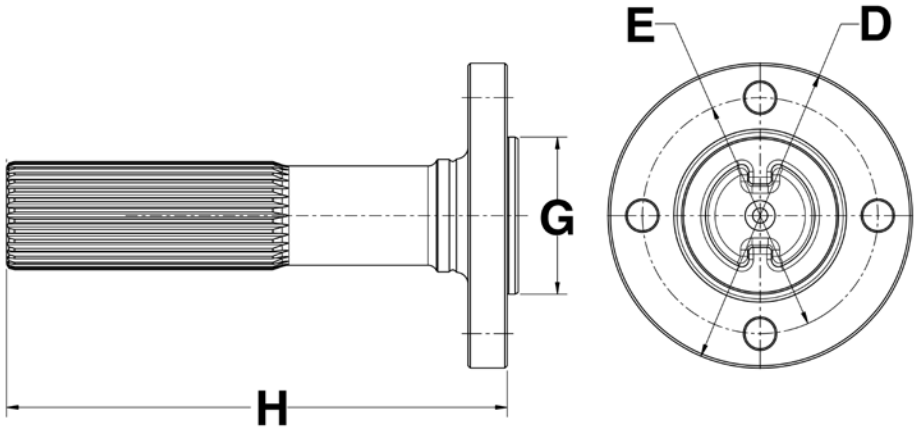


7 Stub Shaft

- CV Flange Stub
- Splined Mid-Ship
- Splined Mid-Ship Cap Screw & Shaft Nut
- Slip Stub

STUB SHAFT

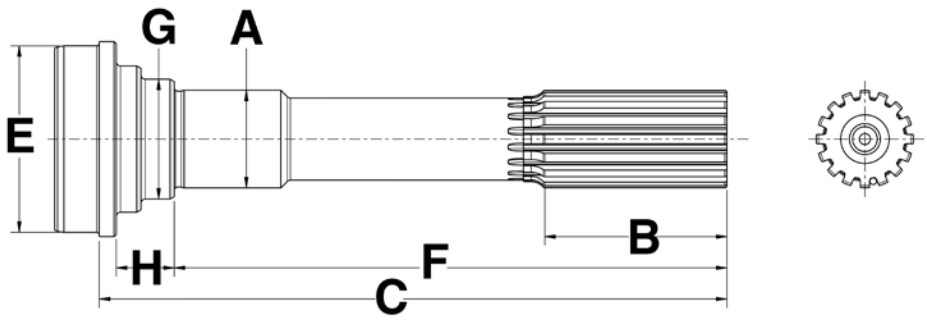
CV FLANGE STUB



DL Series	Spline / Number Teeth	E Bolt Circle	Hole/ Thread Size	Number Of Bolt Holes	G Pilot Dia.	H Flange Face To End	Part Number
1310 Series							
1310	1.375-32	3.00	0.38	4	2.00-M	6.38	**N2-81-1181**

STUB SHAFT

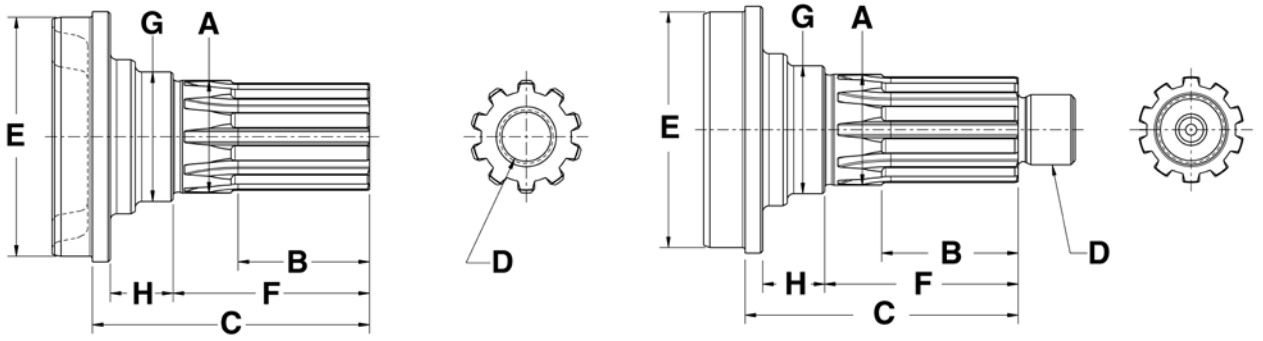
SPLINED MID-SHIP - FOR OUTBOARD SLIP YOKES



Spline / Number Teeth	A Bear-ing Dia.	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	C End Of Spline To Point Of Weld	F End Of Spline To Bearing Shoul-der	G Shoul-der Dia.	H Length Of Shoul-der	Part Number
1.375-15/16	1.378	2.750X.065	2.62	2.50	8.84	7.78	1.69	0.81	**N2-53-711-1**
1.375-15/16	1.378	2.750X.095	2.57	2.50	8.84	7.78	1.69	0.81	**N2-53-711-2**
1.375-15/16	1.378	3.000X.065	2.88	2.50	8.84	7.78	1.69	0.81	**N2-53-691**
1.375-15/16	1.378	3.000X.083	2.84	2.50	8.84	7.78	1.69	0.81	**N2-53-711**
1.375-16	—	1.620X.205	1.22	2.50	9.00	7.47	—	—	**N2-53-9170-5**
1.375-16	—	2.750X.065	2.62	2.50	8.84	—	—	—	**N2-53-9170-2**
1.375-16	1.378	2.500X.065	2.38	4.97	8.09	6.75	1.72	1.12	**N3-53-1351-1**
1.375-16	1.378	2.500X.083	2.34	4.97	8.09	6.75	1.72	1.12	**N3-53-1351**
1.375-16	1.378	2.500X.083	2.34	5.41	8.00	6.94	1.69	0.81	**N2-53-471**
1.375-16	1.378	3.000X.065	2.88	5.41	8.00	6.94	1.69	0.81	**N2-53-491**
1.375-16	1.378	3.000X.083	2.84	4.44	7.03	5.97	1.69	0.81	**N3-53-1371**
1.375-16	1.378	3.000X.083	2.84	4.97	8.09	6.75	1.72	1.12	**N3-53-1361**
1.375-16	1.378	3.000X.083	2.84	5.41	8.00	6.94	1.69	0.81	**N2-53-501**
1.375-31/32	—	1.620X.205	1.22	3.38	9.00	7.47	—	—	**N3-53-1181-5**
1.375-31/32	1.378	2.750X.065	2.62	3.38	8.81	7.47	1.72	1.12	**N3-53-1181-2**
1.375-31/32	1.378	2.750X.095	2.57	3.38	8.81	7.47	1.72	1.12	**N3-53-1181-1**
1.375-31/32	1.378	3.000X.083	2.84	3.38	8.81	7.47	1.72	1.12	**N3-53-1181**
1.500-16	1.575	3.000X.083	2.84	4.44	7.06	5.94	1.81	0.88	**N3-53-1031**
1.562-16	1.575	3.500X.083	3.34	5.94	8.53	7.47	1.94	0.81	**N3-53-451**
1.750-16	1.772	3.500X.095	3.31	5.94	8.56	7.47	2.19	0.81	**N4-53-61**

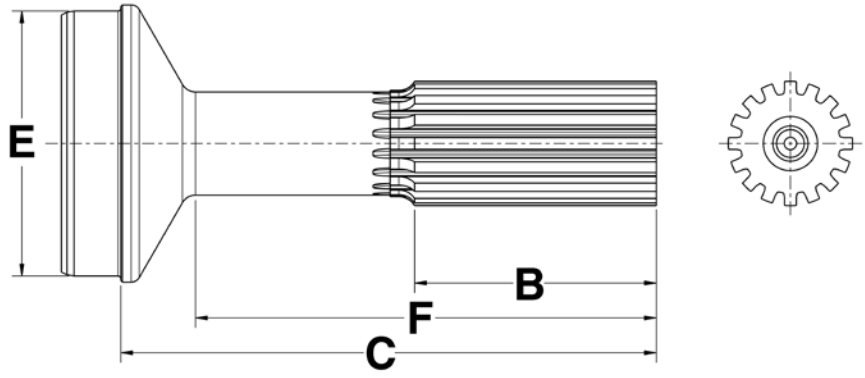
STUB SHAFT

MID-SHIP - CAP SCREW & SHAFT NUT TYPE



Spline / Number Teeth	A Bearing Dia.	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	C End Of Spline To Point Of Weld	D Thread Size	F End Of Spline To Bearing Shoul-der	G Shoul-der Dia.	H Length Of Shoul-der	Part Number
1.125-26	1.181	2.500X.065	2.38	1.38	3.50	0.63-18-M	2.03	1.48	0.85	**N2-53-1011-1**
1.375-10	1.378	3.000X.083	2.84	1.69	4.00	1.00-20-M	2.66	1.72	1.12	**N3-54-611**
1.375-10	1.378	3.000X.083	2.84	1.96	3.97	0.50-20F	2.92	2.06	0.81	**N3-53-191**
1.500-10	1.575	3.000X.083	2.84	1.94	3.88	1.00-20-M	2.75	1.81	0.88	**N3-53-1781**
1.500-10	1.575	3.500X.083	3.34	1.81	3.88	0.75-16-F	2.75	1.81	0.88	**N3-53-1081**
1.500-10	1.575	3.500X.083	3.34	1.88	4.03	0.75-16-F	2.97	1.94	0.81	**N3-53-431**
1.500-10	1.575	3.500X.083	3.34	1.94	3.88	1.00-20-M	2.75	1.81	0.88	**N3-53-1791**
1.500-10	1.575	3.500X.095	3.31	1.88	4.03	0.75-16-F	2.97	1.94	0.81	**N4-53-71**
1.500-10	1.575	4.000X.083	3.84	1.94	3.88	1.00-20-M	2.75	1.81	0.88	**N3-53-1801**
1.750-10	1.772	3.500X.134	3.24	2.1	4.34	1.25-18-M	3.25	2.19	0.81	**N5-53-141**
1.750-10	1.772	4.000X.134	3.73	2.28	4.34	1.25-18-M	3.25	2.19	0.81	**N5-53-191**
1.750-34	1.772	4.000X.134	3.74	2.15	4.22	1.25-18-M	3.12	2.19	0.81	**N5-53-271**
1.950-38	1.968	4.000X.134	3.74	2.84	5.16	1.25-18-M	4.06	2.44	0.81	**N6-53-411**
1.953-10	1.968	3.500X.156	3.19	2.88	5.16	1.25-18-M	4.06	2.44	0.81	**N6-53-151**
1.953-10	1.968	4.000X.134	3.75	2.88	5.16	1.25-18-M	4.06	2.44	0.81	**N6-53-201**
1.953-10	1.968	4.000X.134	3.75	2.88	5.55	1.25-18-M	4.06	2.44	0.81	**N6-53-201-1**
1.953-10	1.968	4.500X.134	4.25	2.88	5.16	1.25-18-M	4.06	2.44	0.81	**N6-53-241**
2.349-16	2.362	4.000X.134	3.75	2.62	5.31	1.25-18-M	4.00	2.88	0.81	**N6-53-311**
2.349-16	2.362	4.500X.134	4.25	2.62	5.31	1.25-18-M	4.00	2.88	0.81	**N6.5-53-91**
2.349-16	2.362	4.500X.259	4.00	2.75	5.44	1.25-18-M	4.00	2.88	0.81	**N6.5-53-51**
2.350-46	2.362	4.000X.134	3.74	2.72	5.31	1.25-18-M	4.00	2.88	0.81	**N6.3-53-21**
2.350-46	2.362	4.500X.134	4.24	2.72	5.31	1.25-18-M	4.00	2.88	0.81	**N6.5-53-171**
2.350-46	2.362	4.500X.259	4.00	2.72	5.31	1.25-18-M	4.00	2.88	0.81	**N6.5-53-181**

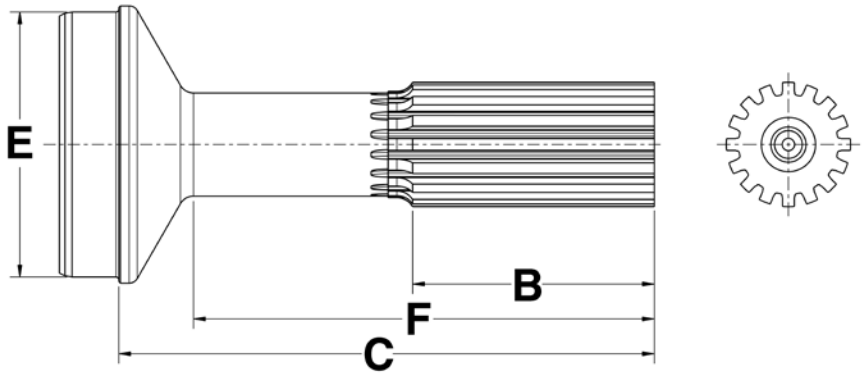
SLIP STUB SHAFT



Spline / Number Teeth	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	F End Of Spline To Radius	C End Of Spline To Weld	Part Number
1.125-10	2.000X.083	1.84	2.00	4.06	4.62	**11-1753**
1.250-16	1.250X.120	1.03	2.00	5.38	6.12	**N2-40-1771**
1.250-16	1.250X.188	0.84	2.00	5.38	6.12	**N2-42-501**
1.250-16	2.000X.083	1.84	2.00	5.41	6.00	**N2-40-1741**
1.250-16	2.000X.120	1.77	2.00	5.41	6.00	**N2-40-2381**
1.250-16	2.500X.065	2.38	2.00	5.41	6.12	**N2-40-2211**
1.250-16	2.500X.065	2.38	2.50	6.84	7.56	**N2-40-2301**
1.375-16	—	1.25	2.50	—	24-OAL	**N2-40-138-2**
1.375-16	2.000X.083	1.84	2.25	4.62	5.19	**N2-40-1031**
1.375-16	2.000X.083	1.84	2.25	6.12	6.69	**N2-40-1841-1**
1.375-16	2.000X.120	1.77	2.25	5.62	6.19	**N2-40-1701**
1.375-16	2.000X.120	1.77	2.25	6.12	6.69	**N2-40-1701-1**
1.375-16	2.000X.120	1.77	6.25	7.25	7.75	**N2-40-1701-2**
1.375-16	2.500X.065	2.38	2.25	5.56	6.28	**N2-40-1251**
1.375-16	2.500X.065	2.38	2.25	5.62	6.34	**N2-40-1811**
1.375-16	2.500X.065	2.38	2.25	6.12	6.84	**N2-40-1291**
1.375-16	2.500X.083	2.34	2.25	5.62	6.34	**N2-40-1711**
1.375-16	2.500X.083	2.34	2.25	6.81	7.53	**N2-40-1851**
1.375-16	2.500X.095	2.32	2.25	5.62	6.34	**N2-40-1712**
1.375-16	2.500X.095	2.32	3.38	7.25	8.12	**N2-40-2791-1**
1.375-16	2.750X.065	2.62	2.25	5.62	6.44	**N2-40-1221-1**
1.375-16	3.000X.065	2.88	2.25	5.62	6.44	**N2-40-1221**
1.375-16	3.000X.065	2.88	2.25	6.81	7.62	**N2-40-2051**
1.375-16	3.000X.083	2.84	2.25	5.62	6.44	**N2-40-1521**
1.375-16	3.000X.083	2.84	6.78	7.83	8.64	**N2-40-1871**

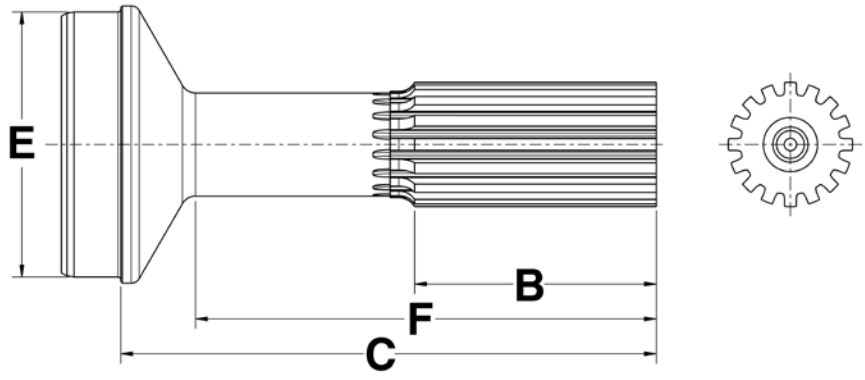
STUB SHAFT

SLIP STUB SHAFT (Cont'd)



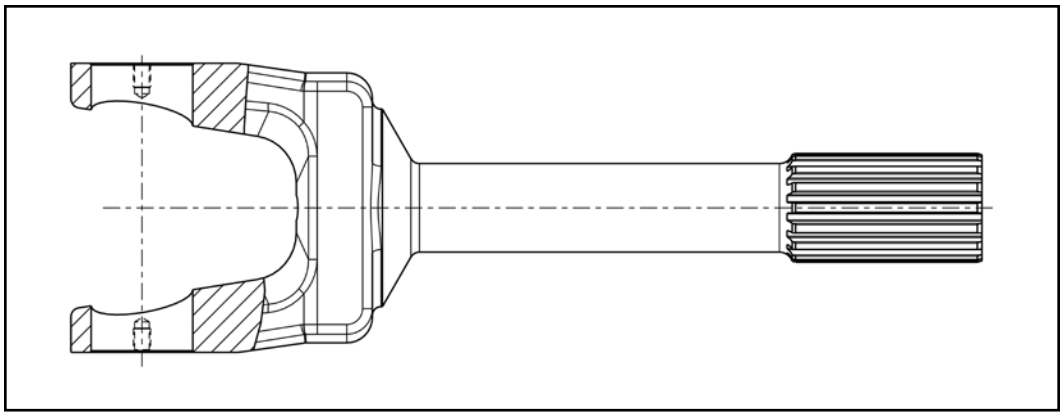
Spline / Number Teeth	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	F End Of Spline To Radius	C End Of Spline To Weld	Part Number
1.375-16	3.500X.065	3.38	2.25	5.56	6.56	**N2-40-1231**
1.375-16	3.500X.083	3.34	2.25	5.62	6.62	**N2-40-1531**
1.375-16	3.500X.083	3.34	6.97	7.97	8.97	**N2-40-2091**
1.500-16	2.500X.083	2.34	2.50	4.97	5.62	**N3-40-1471**
1.500-16	2.500X.095	2.23	2.50	4.97	5.62	**N3-40-1472**
1.500-16	2.750X.083	2.59	2.50	6.44	7.25	**N3-40-1222**
1.500-16	3.000X.083	2.84	2.50	5.12	5.94	**N3-40-1101**
1.500-16	3.000X.083	2.84	2.50	6.44	7.25	**N3-40-1611**
1.500-16	3.500X.083	3.34	2.50	6.41	7.34	**N3-40-1561**
1.500-16	3.500X.083	3.34	3.00	5.62	6.56	**N3-40-1531**
1.500-16	3.500X.083	3.34	3.00	6.59	7.53	**N3-40-1491**
1.563-16	3.500X.083	3.34	3.00	5.81	6.75	**N3-40-1571**
1.563-16	3.500X.083	3.34	3.00	7.81	8.75	**N3-40-1391**
1.750-16	3.500X.095	3.31	3.00	5.81	6.78	**N4-40-761**
1.750-16	3.500X.095	3.31	3.00	8.25	9.22	**N4-40-721**
2.000-16	3.500X.095	3.31	3.50	8.66	9.56	**N5-40-501**
2.000-16	3.500X.134	3.24	3.50	6.56	7.56	**N5-40-1191**
2.000-16	3.500X.134	3.24	3.50	8.78	9.69	**N5-40-1011**
2.000-16	3.500X.134	3.24	3.50	9.28	10.19	**N5-40-1041**
2.000-16	4.000X.134	3.74	3.50	8.80	9.85	**N5-40-1051**
2.500-16	3.500X.156	3.19	4.00	8.38	9.25	**N6-40-741**
2.500-16	4.000X.134	3.74	4.00	8.25	9.25	**N6-40-541**
2.500-16	4.000X.134	3.74	4.00	9.56	10.56	**N6-40-521**
2.500-16	4.500X.134	4.24	4.00	8.31	9.50	**N6-40-631**
2.500-16	4.500X.134	4.24	4.00	9.47	10.66	**N6-40-621**

SLIP STUB SHAFT (Cont'd)



Spline / Number Teeth	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	F End Of Spline To Radius	C End Of Spline To Weld	Part Number
3.000-16	4.500X.134	4.24	4.50	10.03	11.25	**N6.5-40-191**
3.000-16	4.500X.134	4.24	4.50	8.41	9.47	**N6.5-40-201**
3.000-16	4.500X.259	4.00	4.50	10.25	11.53	**N8-40-101**

NOTES

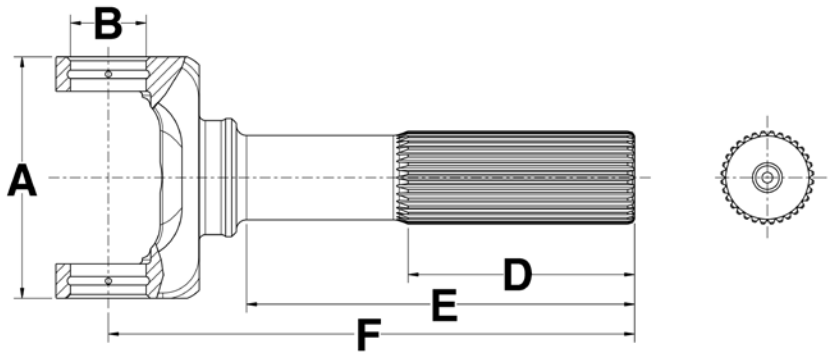


8 Yoke Shaft

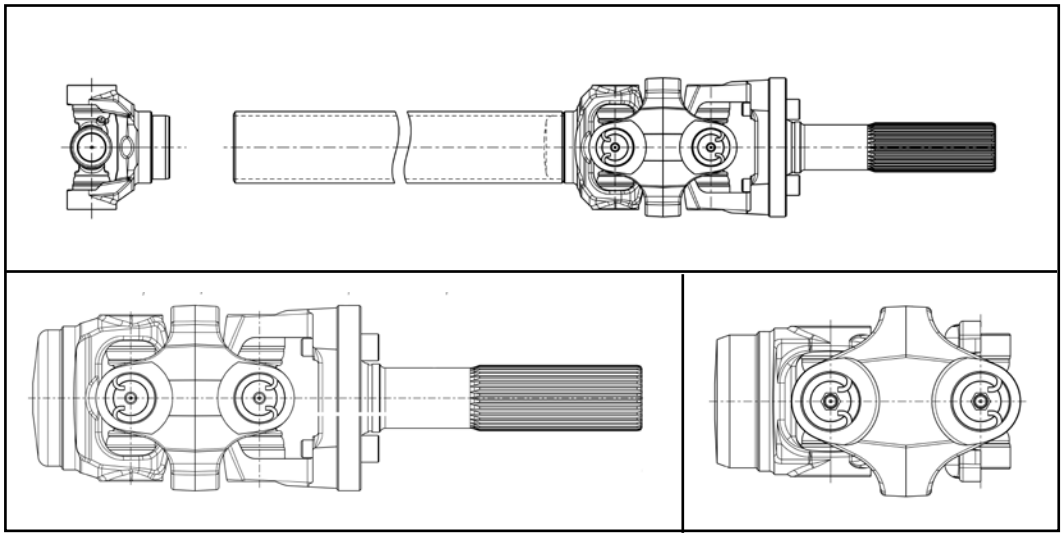
- Inside Lock-Up

YOKE SHAFT

INSIDE LOCK-UP



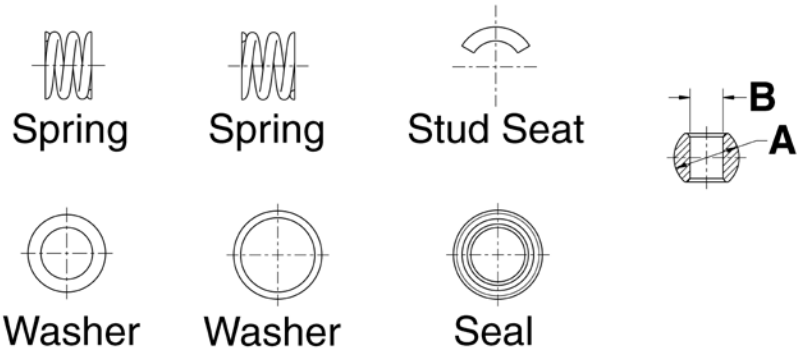
DL Series	Spline / Number Teeth	D Length Of Spline	CL To Face Washer	F CL To End Of Spline	Part Number
3R Series A-3.563 B-1.125 C-2.563					
3R	1.375-32	3.35	5.91	7.81	**N3R-82-1181**



9 Driveshaft & C.V.

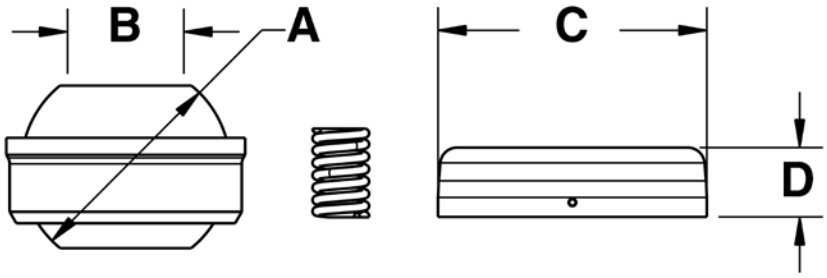
- C.V. Repair Kit
- C.V. Head Assembly
- C.V. Head Components
- PTO / AUX Shaft
- PTO / AUX Shaft Components
- Drive Shaft
- Drive Shaft Components
- PTO / AUX Shaft Shielding System

C.V. BALL SEAT REPAIR KIT



Manufacturer	A Ball Dia.	B Stud Bore Dia.	C Seal Outside Dia.	D Seal Height	Part Number
Saginaw	0.88	0.60			**2-9303**
Saginaw	0.91	0.46	1.24	0.17	**2-9302**
Saginaw	0.91	0.62			**2-9301**

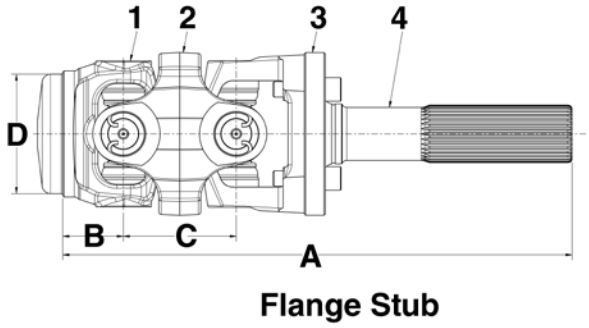
C.V. BALL SEAT REPAIR KIT



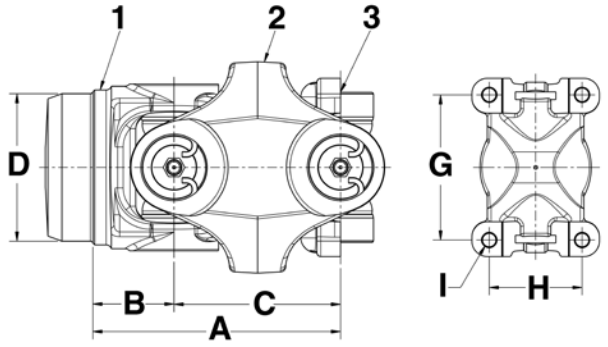
Manufacturer	A Ball Dia.	B Stud Bore Dia.	C Seal Outside Dia.	D Seal Height	Part Number
Spicer	1.12	0.50	1.34	0.16	**7-0081NG**
Spicer	1.12	0.50	1.45	0.38	**7-0081**
Toyota	1.34	0.47	1.42		**7-0407**
Toyota	1.46	0.51	1.52		**7-0409**

DRIVESHAFT & C.V.

C.V. HEAD ASSEMBLY



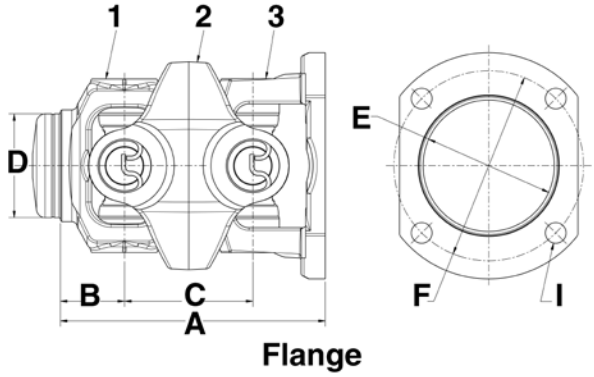
Flange Stub



Half Round

DL Series	CV Head Style	Tubing Dia. And Wall	D Butt Dia.	B CL To Point Of Weld	C CL To CL Of Center Yoke	E Pilot Dia.	F Bolt Circle	G Bolt Hole Spacing Height	H Bolt Hole Spacing Width	I Hole/ Thread Size	A Overall Length	Joint Angle	Part Number
1310 Series													
1310	Flange Stub	2.000 X.120	1.77	1.44	2.69	2.00	3.00	—	—	0.38-24UNF	12.12	26	**N913601**
1310	Flange Stub	3.000 X.083	2.84	1.44	2.69	2.00	3.00	—	—	0.38-24UNF	12.12	26	**N913600**
1310	Half Round	2.000 X.120	1.77	1.44	2.69	—	—	2.34	1.50	0.31-24UNF	4.12	26	**N912777**
1310	Half Round	2.500 X.083	2.34	1.44	2.69	—	—	2.34	1.50	0.31-24UNF	4.12	26	**N912747**
1330 Series													
1330	Flange	2.000 X.120	1.77	1.44	2.88	3.12	4.25	—	—	0.46	5.75	18	**N910814**
1330	Half Round	2.000 X.120	1.77	1.38	2.75	—	—	2.88	1.50	0.31-24UNF	4.12	18	**N910810**
1330	Half Round	2.500 X.083	2.34	1.38	2.75	—	—	2.88	1.50	0.31-24UNF	4.12	18	**N910811**
1330	Half Round	3.000 X.065	2.88	1.44	2.75	—	—	2.88	1.50	0.31-24UNF	4.19	18	**N910812**

C.V. HEAD ASSEMBLY

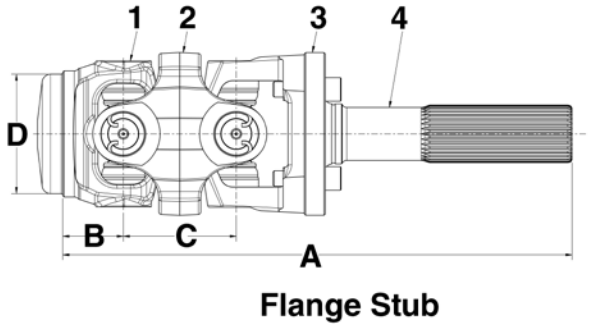


Flange

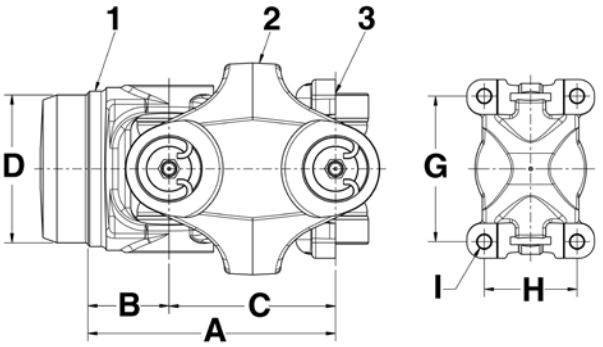
DL Series	CV Head Style	Tubing Dia. And Wall	D Butt Dia.	B CL To Point Of Weld	C CL To CL Of Center Yoke	E Pilot Dia.	F Bolt Circle	G Bolt Hole Spacing Height	H Bolt Hole Spacing Width	I Hole/ Thread Size	A Overall Length	Joint Angle	Part Number
1350 Series													
1350	Flange	2.000 X.120	1.77	1.44	2.88	3.12	4.25	—	—	0.46	5.94	32	**N921049**
1350	Flange	2.500 X.095	2.32	1.44	2.88	2.16	3.94	—	—	0.48	5.94	32	**N921056**
1350	Flange	2.500 X.095	2.32	1.44	2.88	3.12	4.25	—	—	0.46	5.94	32	**N921050**
1350	Flange	2.750 X.083	2.59	1.47	2.88	2.00	4.25	—	—	M12 X1.75	5.97	32	**N921052**
1350	Flange	3.500 X.083	3.34	1.50	2.88	2.68	4.25	—	—	M12 X1.75	6.00	32	**N921054**
3R Series													
3R	Flange	2.000 X.120	1.77	1.62	3.25	—	4.25	—	—	0.45	6.56	17	**4137268**

DRIVESHAFT & C.V.

C.V. HEAD COMPONENTS



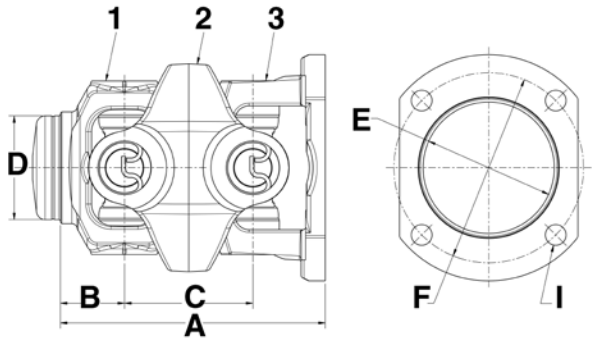
Flange Stub



Half Round

DL Series	CV Head Style	1 Ball Stud Yoke	2 H Yoke	3 Socket Yoke	4 Flange Adapter	U-Joint	Tubing Size	Part Number
1310 Series								
1310	Flange Stub	N2-28-2947X	N2-26-477	N2-83-599X	N2-81-1181	1-0154	2.00X.120	**N913601**
1310	Flange Stub	N2-28-2977X	N2-26-477	N2-83-599X	N2-81-1181	1-0154	3.00X.083	**N913600**
1310	Half Round	N2-28-2947X	N2-26-367	7-0082	—	1-0154	2.00X.120	**N912777**
1310	Half Round	N2-28-2957X	N2-26-367	7-0082	—	1-0154	2.50X.083	**N912747**
1330 Series								
1330	Flange	N2-28-3257X	N2-26-527	N2-83-913X	—	2-4801	2.00X.120	**N910814**
1330	Half Round	N2-28-2157X	N2-26-527	7-0079	—	2-4801	2.00X.120	**N910810**
1330	Half Round	N2-28-2137X	N2-26-527	7-0079	—	2-4801	3.00X.065	**N910811**
1330	Half Round	N2-28-2117X	N2-26-527	7-0079	—	2-4801	3.00X.065	**N910812**

C.V. HEAD COMPONENTS

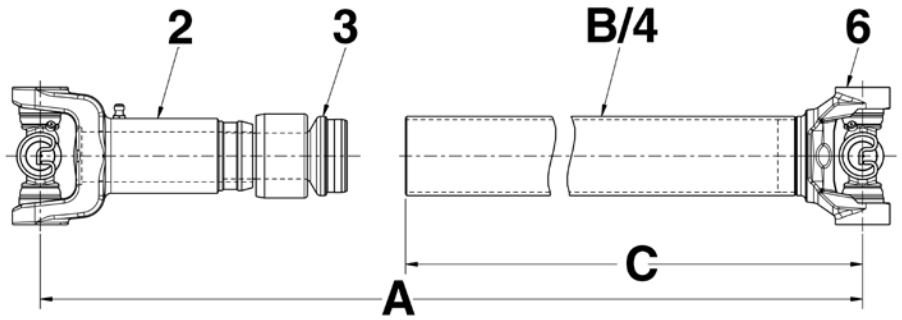


Flange

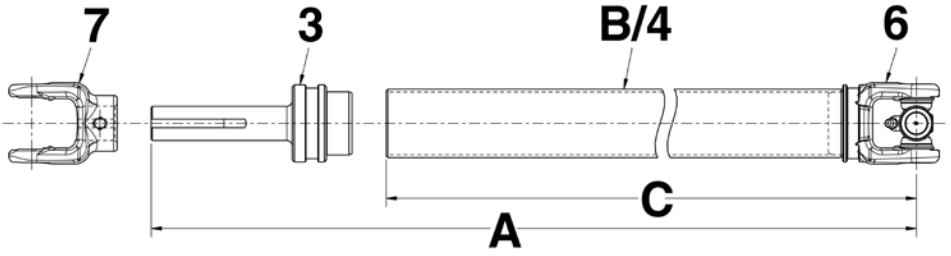
DL Series	CV Head Style	1 Ball Stud Yoke	2 H Yoke	3 Socket Yoke	4 Flange Adapter	U-Joint	Tubing Size	Part Number
1350 Series								
1350	Flange	N3-28-2947X	N2-26-757	N3-83-3281X	—	2-0052	2.00X.120	**N921049**
1350	Flange	N3-28-3281X	N2-26-757	N3-83-072X	—	2-0052	2.50X.095	**N921056**
1350	Flange	N3-28-3281X	N2-26-757	N3-83-3281X	—	2-0052	2.50X.095	**N921050**
1350	Flange	N3-28-1747-1X	N2-26-757	N3-83-024X	—	2-0052	2.75X.083	**N921052**
1350	Flange	N3-28-1527-1X	N2-26-757	N3-83-025X	—	2-0052	3.50X.083	**N921054**
3R Series								
3R	Flange	N3R-28-869	N3R-26-057	N3R-83-482	—	2-3011	2.00X.120	**4137268**

DRIVESHAFT & C.V.

PTO / AUX SHAFT



Type 1



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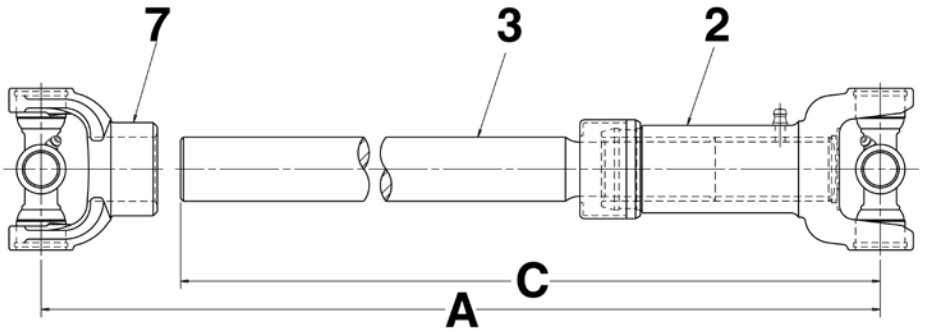
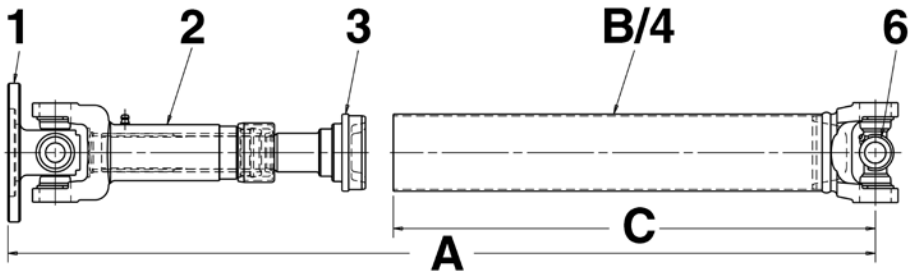


Type 3

PTO / AUX SHAFT

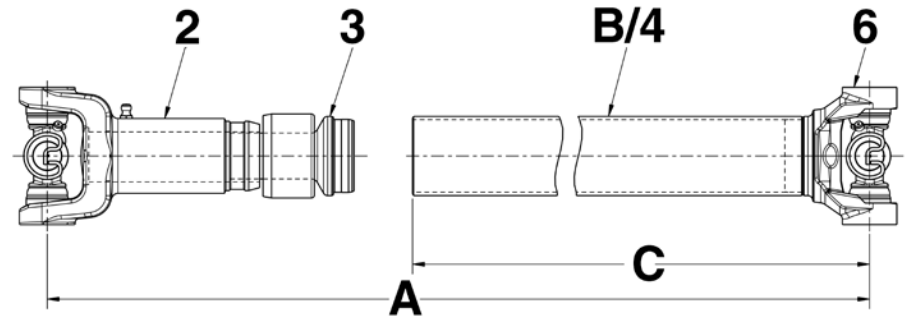


Type 4

DL Series	Driveshaft Style	B Tube Size	A Maximum Extended Length	A Compressed Length	C Yoke/CV And Tube Length	Part Number
1000 Series						
1000	Unwelded-1	2.000X.083	69.39	67.39	60.25	**N10270-SF**
1000	Unwelded-2	2.000X.083	65.03	—	60.25	**N10271-SF**
1310 Series						
1310	Unwelded-1	2.000X.083	57.69	55.69	49.44	**N9553-SF**
1310	Unwelded-3	1.250	28.44	26.12	25.06	**N91382-SF**
1350 Series						
1350	Unwelded-1	2.500X.083	63.08	61.08	54.19	**N7703-SF**
1350	Welded-4	3.000X.083	37.81	35.81	—	**N135-36-SLBP**
1410 Series						
1410	Welded-4	3.500X.083	37.72	34.28	—	**N141-36-SLBP**
1480 Series						
1480	Welded-4	3.500X.083	36.87	35.13	—	**N148-38-SLBP**
1550 Series						
1550	Welded-4	3.500X.095	37.25	34.75	—	**N155-36-SLBP**
1610 Series						
1610	Welded-4	3.500X.134	38.31	34.31	—	**N161-36-SLBP**

DRIVESHAFT & C.V.

PTO / AUX SHAFT - COMPONENTS



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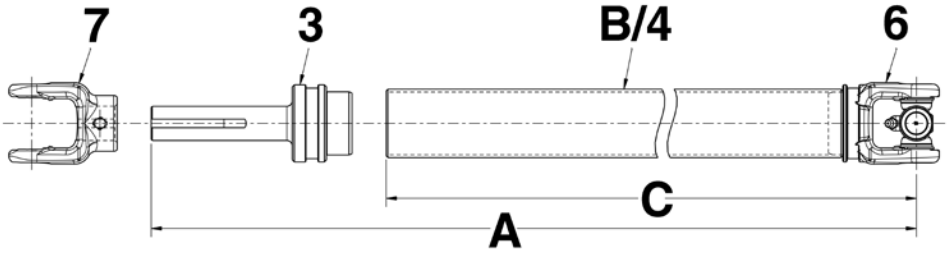

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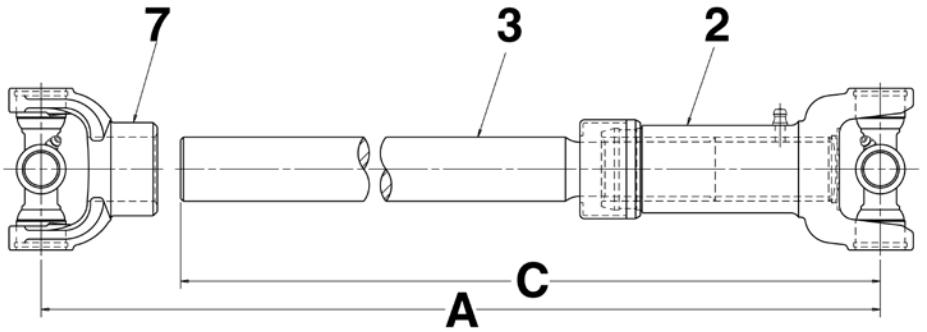
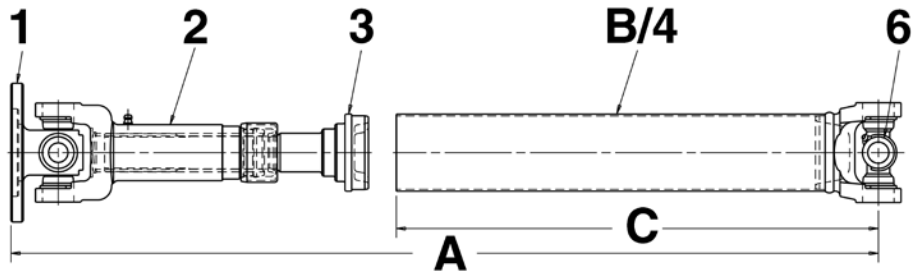


Type 3

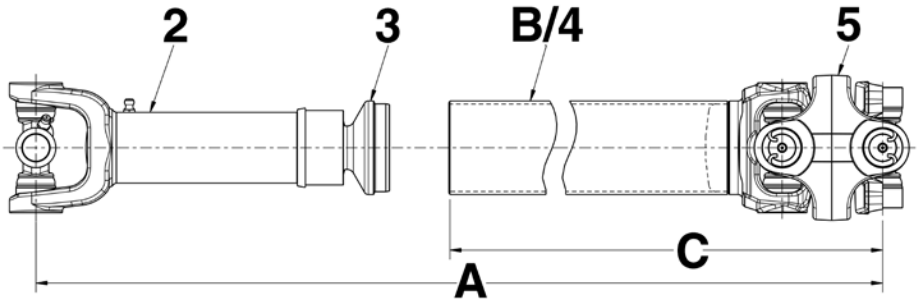
PTO / AUX SHAFT - COMPONENTS



Type 4

DL Series	Driveshaft Style	U-Joint	2 Slip Yoke	Dust Cap	3 Stub Shaft	6 Tube Weld Yoke	7 End Yoke	Part Number
1000 Series								
1000	Unwelded-1	1-0170	10-0318	280196	N2-40-1741	10-1005	—	**N10270-SF**
1000	Unwelded-2	1-0170	—	—	10-0699	10-1005	10-0493	**N10271-SF**
1310 Series								
1310	Unwelded-1	1-0153	N2-3-128KX	280194	N2-40-1031	N2-28-357	—	**N9553-SF**
1310	Unwelded-3	1-0153	N2-3-7981KX	280194	N2-40-138-2	—	N2-4-533-1	**N91382-SF**
1350 Series								
1350	Unwelded-1	2-0053	N3-3-598KX	ND3A	N3-40-1471	N3-28-47	—	**N7703-SF**

DRIVE SHAFT - STEEL



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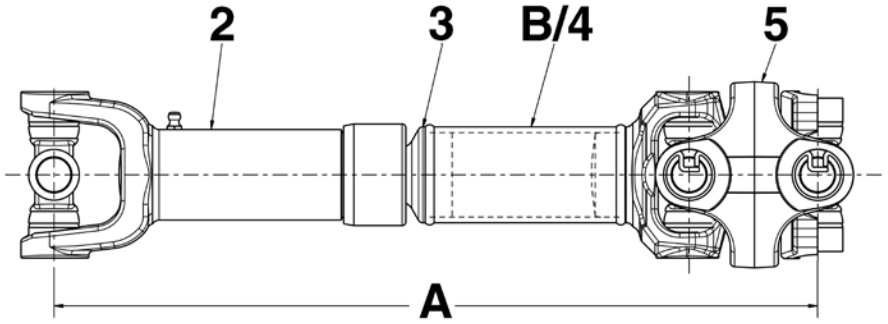

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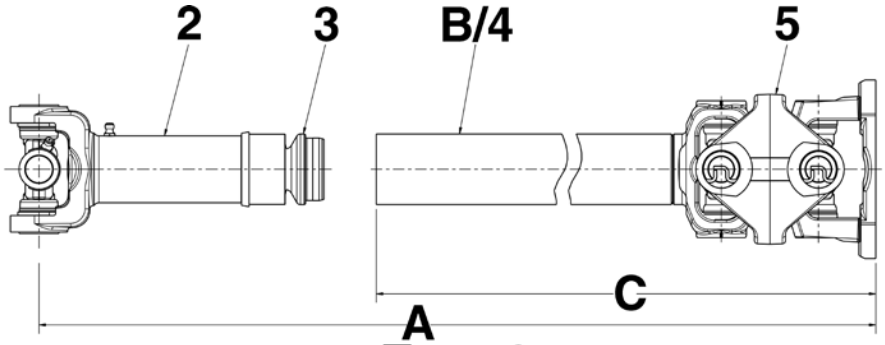

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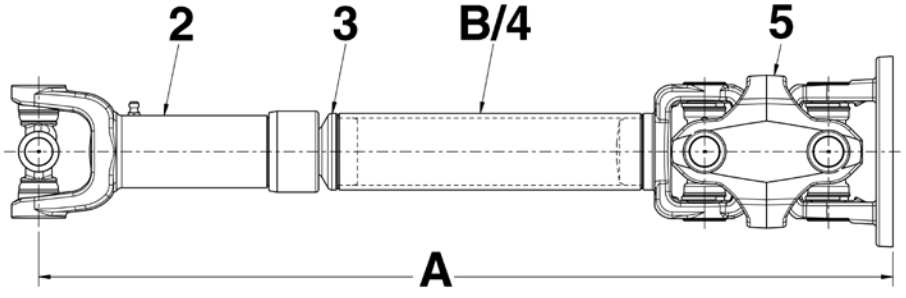
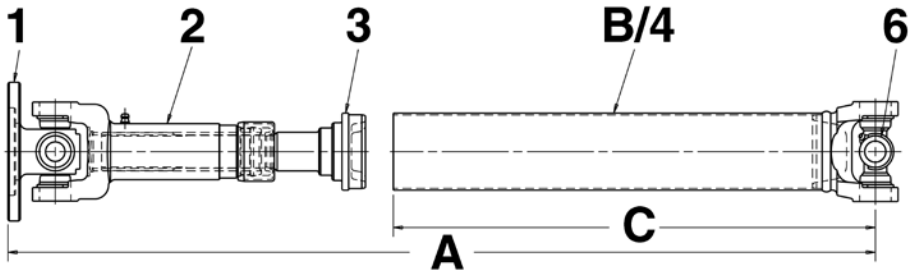


Type 12

DRIVE SHAFT - STEEL

DL Series	Driveshaft Style	B Tube Size	A Maximum Extended Length	A Com-pressed Length	C Yoke/Cv And Tube Length	Part Number
1310 Series						
1310	Unwelded CV-7	2.000X.120	40.94	37.84	30.12	**N909365-2600**
1310	Unwelded CV-7	2.500X.083	42.28	39.19	30.12	**N909363-2600**
1310/1330 Series						
1310/1330	Unwelded CV-8	2.000X.120	37.38	34.28	26.56	**S91397-2000**
1330 Series						
1330	Unwelded CV-7	2.500X.083	42.91	38.75	30.12	**N911818-2600**
1330/1350 Series						
1330/1350	Unwelded CV-8	2.500X.095	36.02	33.35	25.94	**N921056X-2000**
1330/1350	Unwelded CV-8	2.500X.095	38.06	35.18	25.94	**N921050-2000**
1350 Series						
1350	Unwelded CV-8	2.750X.083	48.34	44.8	36.31	**N921052-3000**
1350	Unwelded CV-8	3.500X.083	66.16	62.91	54.31	**N921054-4800**
1410/1350 Series						
1410/1350	Unwelded CV-8	3.500X.083	66.7	63.26	54.31	**N921054-4801**

DRIVE SHAFT - STEEL (Cont'd)



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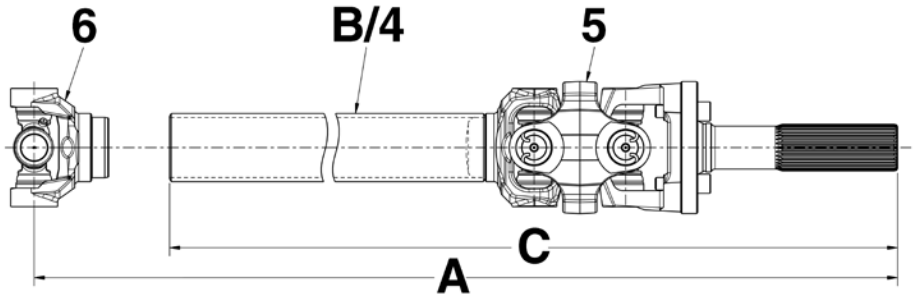

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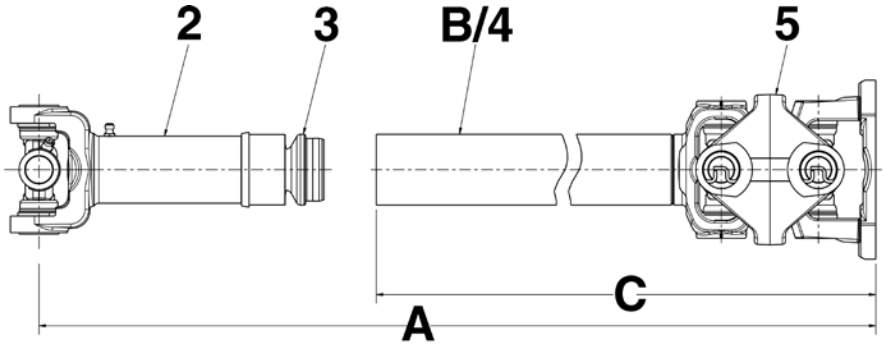


Type 8

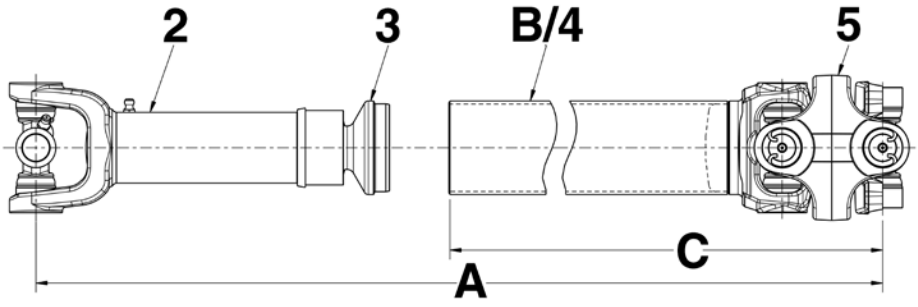
DRIVE SHAFT - STEEL (Cont'd)

DL Series	Driveshaft Style	B Tube Size	A Maximum Extended Length	A Com-pressed Length	C Yoke/Cv And Tube Length	Part Number
3R Series						
3R	Unwelded-4	2.750X.065	32.56	29.44	17.25	**S91397-2003**
3R/1310 Series						
3R/1310	Unwelded-9	2.000X.120	43.81			**N131138-3000**
3R/1350 Series						
3R/1350	Unwelded CV-8	2.500X.095	37.94	35.44	25.94	**N921050-2003**
7260/1330 Series						
7260/1330	Unwelded CV-8	2.000X.120	37.38	33.95	26.56	**S91397-2001**
7290/1330 Series						
7290/1330	Unwelded CV-8	2.000X.120	37.06	34.12	26.56	**S91397-2002**

DRIVE SHAFT - ALUMINUM

DL Series	Driveshaft Style	B Tube Size	A Maximum Length CL To CL	CL To Point Of Weld	Part Number
1330 Series					
1330	Unwelded	3.50X.114	60.00	3.90	**A133-4800-3.5**
1350 Series					
1350	Unwelded	3.50X.114	60.00	3.90	**A135-4800-3.5**
1350	Unwelded	4.00X.087	73.00	3.90	**A135-6500-4**
1410 Series					
1410	Unwelded	4.00X.087	73.00	3.90	**A141-6500-4**

DRIVE SHAFT COMPONENTS - STEEL



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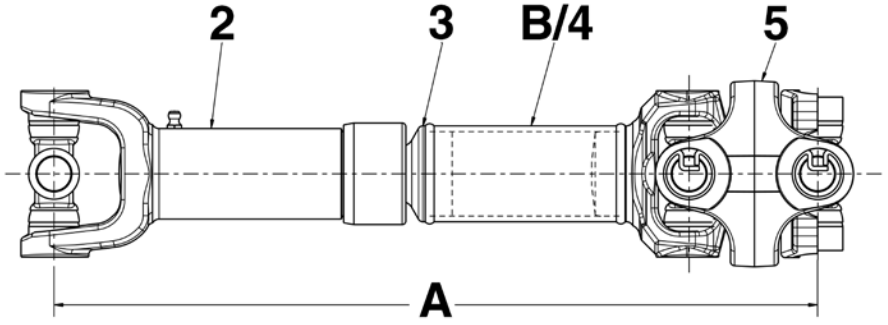

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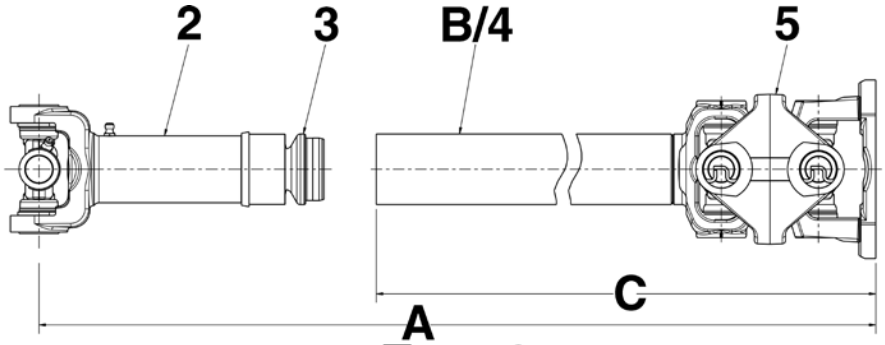

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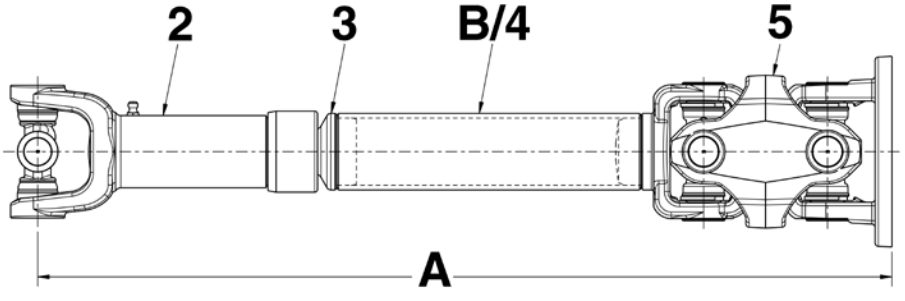
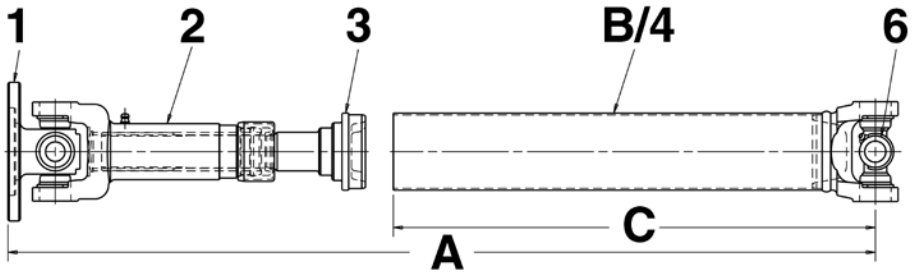


Type 12

DRIVE SHAFT COMPONENTS - STEEL

DL Series	Drive-shaft Style	U-Joint	1 Flange Yoke	2 Slip Yoke	Dust Cap	3 Stub Shaft	5 CV Head	6 Tube Weld Yoke	Part Number
1310 Series									
1310	Unwelded CV-7	1-0153/ 1-0154	—	N2-3-8001KX	280194	N2-40-1701	N912777	—	**N909365-2600**
1310	Unwelded CV-7	1-0153/ 1-0154	—	N2-3-8021KX	280194	N2-40-1851	N912747	—	**N909363-2600**
1310	Welded CV-11	1-0153/ 1-0154	—	N2-3-8001KX	280194	N2-40-1701	N912777	—	**N903862-1409W**
1310	Welded CV-11	1-0153/ 2-3011	—	N2-3-8001KX	280194	N2-40-1701	4137268	—	**N912170-1511W**
1310/1330 Series									
1310/ 1330	Unwelded CV-8	1-0153/ 2-4801	—	N2-3-8001KX	280194	N2-40-1701	N910814	—	**S91397-2000**
1310/3R Series									
1310/ 3R	Welded CV-12	1-0153/ 2-3011	—	N2-3-8001KX	280194	N2-40-1701	4137268	—	**S912170-1803W**
1330 Series									
1330	Unwelded CV-7	2-4900/ 2-4801	—	N2-3-8041KX	280194	N2-40-1851	N910811	—	**N911818-2600**
1330/1350 Series									
1330/ 1350	Unwelded CV-8	2-4800/ 2-0052	—	N2-3-7961KX	280194	N2-40-1712	N921056	—	**N921056X-2000**
1330/ 1350	Unwelded CV-8	2-4800/ 2-0052	—	N2-3-8041KX	280194	N2-40-2791-1	N921050	—	**N921050-2000**
1350 Series									
1350	Unwelded CV-8	2-0053/ 2-0052	—	N3-3-488KX	ND3A	N3-40-1222	N921052	—	**N921052-3000**
1350	Unwelded CV-8	2-0053/ 2-0052	—	N3-3-488KX	ND3A	N3-40-1561	N921054	—	**N921054-4800**
1410/1350 Series									
1410/ 1350	Unwelded CV-8	2-0054/ 2-0052	—	N3-3-508KX	ND3A	N3-40-1561	N921054	—	**N921054-4801**

DRIVE SHAFT COMPONENTS - STEEL



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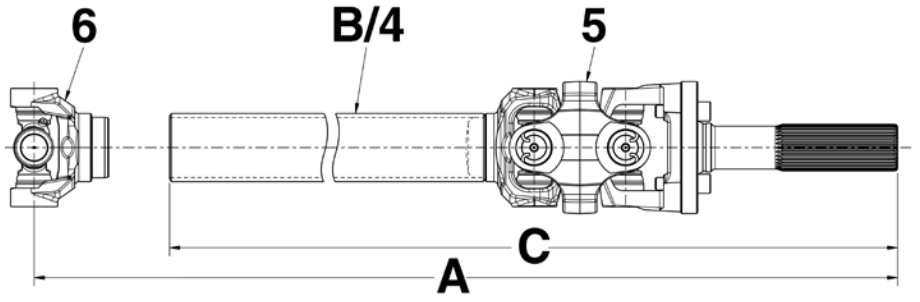

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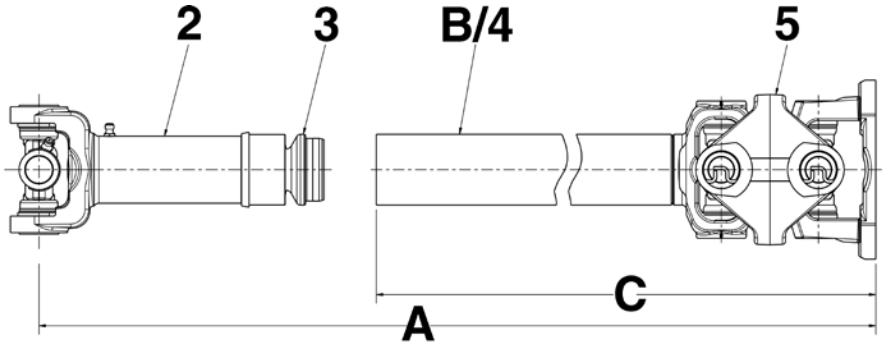


Type 8

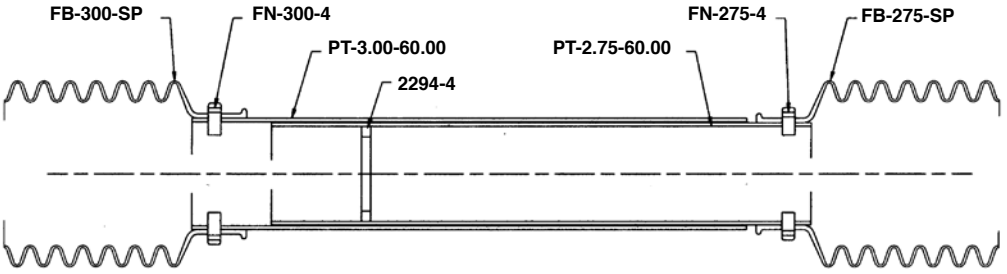
DRIVE SHAFT COMPONENTS - STEEL

DL Series	Drive-shaft Style	U-Joint	1 Flange Yoke	2 Slip Yoke	Dust Cap	3 Stub Shaft	5 CV Head	6 Tube Weld Yoke	Part Number
3R Series									
3R	Unwelded -4	2-3011	N3R-2-8268	N3R-3-9170KX	280194	N2-53-9170-2	—	N3R-28-307	**S91397-2003**
3R/1310 Series									
3R/1310	Unwelded -9	3-3130/1-0154	—	—	—	—	N913601	N2-28-1757	**N131138-3000**
3R/1350 Series									
3R/1350	Unwelded CV-8	2-3011/2-0052	—	N3R-3-9170KX	280194	N2-40-2791-1	N921050	—	**N921050-2003**
7260/1330 Series									
7260/1330	Unwelded CV-8	1-6301/2-4801	—	N2-3-7260KX	280194	N2-40-1701	N910814	—	**S91397-2001**
7290/1330 Series									
7290/1330	Unwelded CV-8	2-1175/2-4801	—	N729-3-1631KX	280194	N2-40-1701	N910814	—	**S91397-2002**

PTO / AUX SHAFT - SHIELDING SYSTEM

68-1000

FB-N1000 Shield Kit

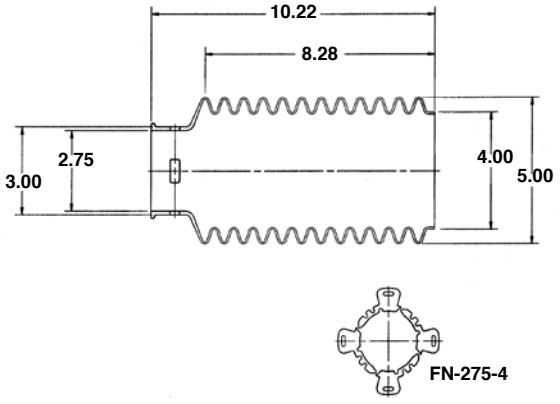


Consists of:

1) FB-275-SP Bell
1) FB-300-SP Bell
1) PT-2.75-60.00” Inner Shield Tube
1) PT-3.00-60.00” Outer Shield Tube
4) FN-275 Shield Bearing
4) FN-300 shield Bearing
1) 2294-4 Shield Support Bearing
1) FBIS-99.6 Instruction Sheet

68-0275

FB-275-SP Replacement Bell Kit

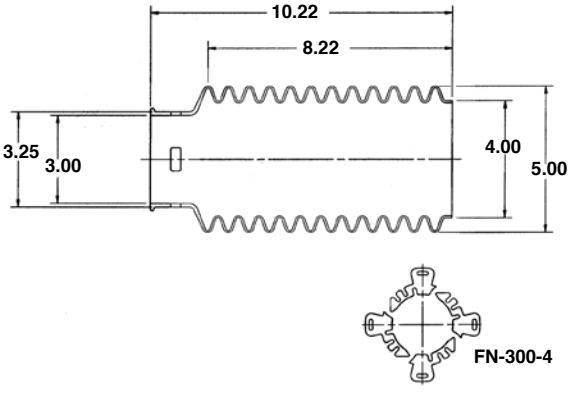


Consists of:

1) FB-275-SP Bell
4) FN-275 Shield Bearing

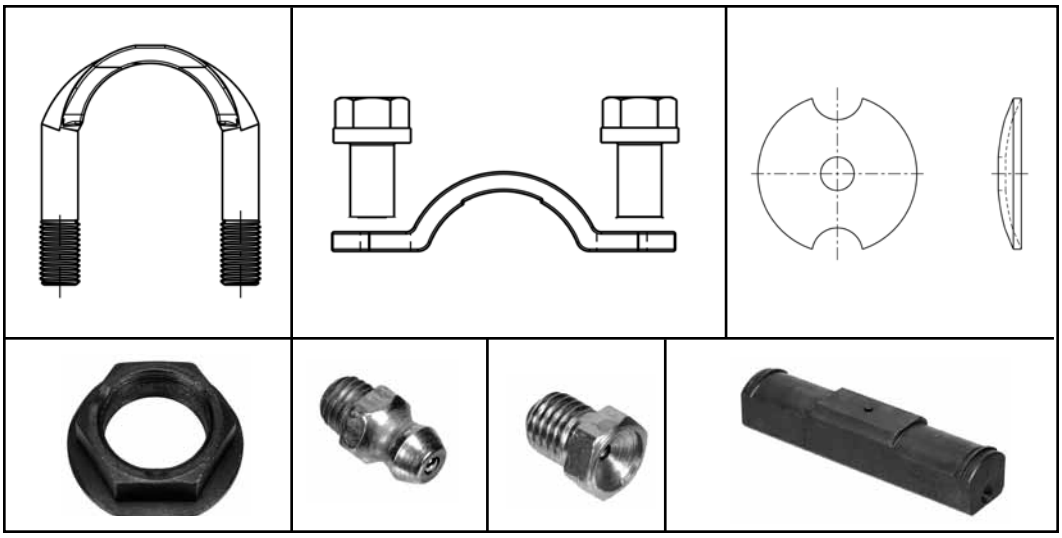
68-0300

FB-300-SP Replacement Bell Kit



Consists of:

1) FB-300-SP Bell
4) FN-300 Shield Bearing

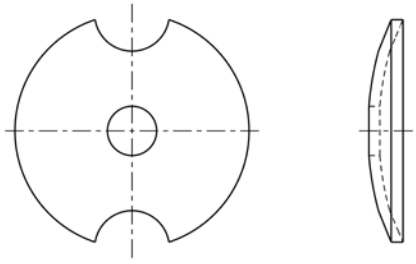


10 Small Parts

- Driveline Weight
- Increasing Bushing
- Pilot Reducer
- Dust Seal
- Welch Plug
- Miscellaneous Fasteners
- Miscellaneous Hardware
- Driveshaft Boot
- Centering Tool

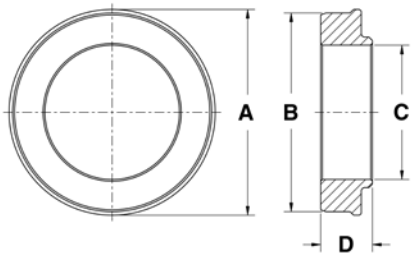
SMALL PARTS

DRIVELINE WEIGHT



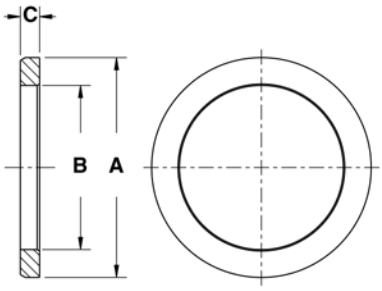
Unit Weight Grams	Unit Weight Ounces	Quantity Per Box	Part Number
4g	0.14	300	**DLW-1**
5g	0.17	250	**DLW-2**
8g	0.28	200	**DLW-3**
10g	0.35	150	**DLW-4**
20g	0.70	250	**DLW-5**
30g	1.05	150	**DLW-6**

INCREASING BUSHING



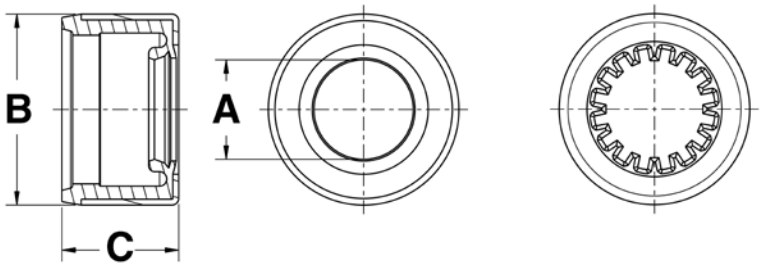
Butt Dia.	Tube Size Max	A Outside Diameter	B Tube Pilot	C Inside Diameter	D Length	Part Number
2.50 X 0.08	3.500X.083	3.5	3.343	2.328	0.875	**5369**
2.50 X 0.10	3.000X.065	3	2.875	2.281	0.875	**5361**
2.50 X 0.10	3.500X.065	3.5	3.375	2.281	0.875	**5362**
3.00 X 0.08	3.500X.083	3.5	3.343	2.838	0.875	**5368**
3.00 X 0.13	3.500X.065	3.5	3.375	2.719	0.875	**5363**
3.00 X 0.13	4.000X.083	4	3.875	2.719	0.875	**5364**
3.50 X 0.08	4.000X.083	4	3.844	3.338	0.875	**5373**
3.50 X 0.16	4.000X.083	4	3.875	3.188	0.875	**5365**
3.50 X 0.16	4.500X.083	4.5	4.375	3.188	1.000	**5366**

PILOT REDUCER



Outside Diameter	Inside Diameter	Part Number
2.68	2.000	**5324**

DUST SEAL

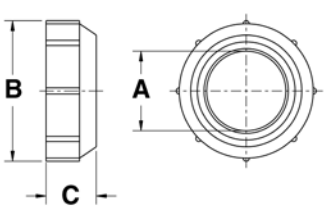


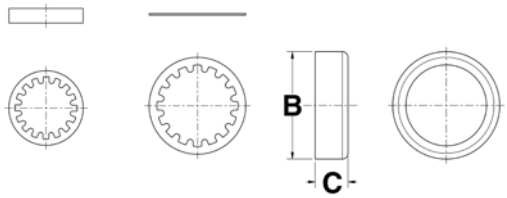
Round **Splined**

DL Series	Type	A Inside Diameter	B Outside Diameter	C Height	Part Number
1000/1210	Round	1.000	2	1.310	**280196**
1310 THRU 1410	Round	1.150	2.12	1.310	**280194**
1310 THRU 1410	Round	1.150	2.12	1.310	**280194-1**
1310 THRU 1410	Splined	1.375-16	2.12	1.000	**280195**
7260	Splined	1.250-16	1.78	0.750	**280200**

SMALL PARTS

DUST SEAL

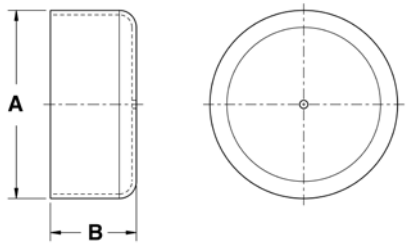




Round **Splined**

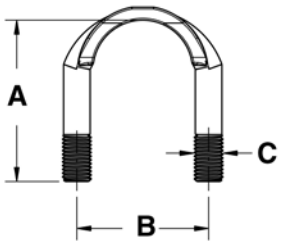
DL Series	Type	A Inside Dia.	B Outside Dia.	C Height	Part Number
1280/1310	Round	1.090	2	0.750	**ND2C**
1280/1310	Splined	1.250-16	1.67	0.650	**ND2K**
1310/1350	Splined	1.375-16	1.77	0.750	**ND3E**
1350/1410	Round	1.190	2.12	0.750	**ND3A**
1350/1410	Splined	1.375-16	1.9	0.750	**ND3G**
1410	Splined	1.500-16	1.9	0.750	**ND3K**
1410/1480	Round	1.240	2.31	0.750	**ND3H**
1550	Round	1.410	2.58	0.910	**ND4J**
1550	Splined	1.750-16	2.34	0.750	**ND4K**
1610	Round	1.620	2.64	0.930	**N5-86-68**
1710/1760	Round	2.060	3.35	0.930	**N6.3-86-18**
1810	Round	2.520	3.96	0.950	**N6.5-86-38**

WELCH PLUG



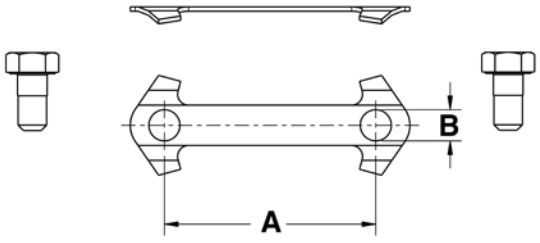
DL Series	A Height	B Outside Dia.	Part Number
1610	0.440	2.2	**N5-68-54**
1710	1.250	2.75	**N6-68-71**
1710/1760	0.530	2.75	**N6-68-51**
1760	1.090	2.75	**N6.3-68-14**
1810	0.620	3.25	**N8-68-13**

U-BOLT KIT



DL Series	Bearing Size	A Stud Length	B CL To CL Of Studs	C Thread Size	Used With UJ	Part Number
1310 / 1330	1.063	1.720	1.406	0.31-24	1-0153 / 1-0154 / 1-0200 / 2-4800	**1-0089**
1350 / 1410	1.188	2.000	1.656	0.38-24	2-0053 / 2-0054	**1-0099**
1480 / 1550	1.375	2.280	1.906	0.44-20	3-0188 / 3-0155	**1-0109**
Clev 1330	1.125	1.820	1.578	0.31-24	2-4900	**1-0189**

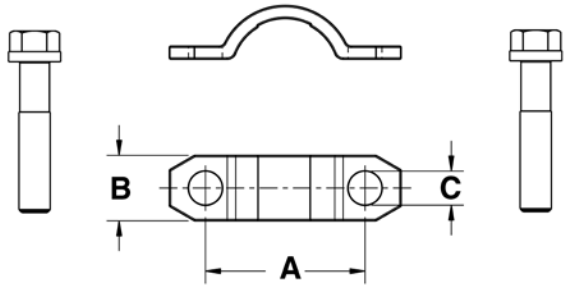
UNIVERSAL JOINT BEARING CAP RETAINER



DL Series	A CL To CL	B Hole Dia.	Used With UJ	Part Number
1610	2.313	0.344	4-0279 / 4-0674	**1-2858**
1710 / 1760 / 1810	2.437	0.406	5-0280 / 6-0675 / 6-0677 / 6-0407 / 6-0676 / 6-0281	**1-2859**
SPL170 / SPL250	—	—	6-1170 / 6-1250	**1-0070**

SMALL PARTS

BEARING STRAP KIT



DL Series	Bearing Size	A CL To CL	B Strap Width	C Bolt Hole Diameter	Length Under Head (Bolt Length)	Thread Size	Used With UJ	Part Number
1310 / 1330	1.063	1.592	0.690	0.28	0.59	0.25-28	1-0153 / 1-0154 / 1-0200 / 2-4800	**1-0022**
1310 / 1330	1.063	1.593	0.620	0.31	1.5	0.31-24	1-0153 / 1-0154 / 1-0200 / 2-4800	**1-0024**
7260	1.078	1.500	0.560	0.27	0.62	0.25-28	1-6300 / 1-6301	**1-0023**
7290	1.125	1.530	0.620	0.28	0.59	0.25-28	2-1175	**1-0018**
3R	1.125	1.812	0.620	0.33	1.5	0.31-24	2-3010 / 2-3011 / 2-3111	**1-0025**
1350 / 1410	1.188	1.660	0.750	0.34	1.5	0.31-24	2-0053 / 2-0054	**1-0020**
1350 / 1410	1.188	1.812	0.750	0.34	0.75	0.31-24	2-0053 / 2-0054	**1-0019**
1480 / 1550	1.375	2.125	0.840	0.40	0.75	0.38-24	3-0188 / 3-0155	**1-0021**
SPL90 / SPL100	1.620	2.310		0.39	0.75	0.38-24	4-1090 / 4-1091	**N90-70-28X**
1610	1.875	2.500	1.000	0.41	0.75	0.38-24	4-0674	**1-0045**
1710 / 1760 / 1810	1.937	2.812	1.060	0.53	1.0	0.50-20	6-0675 / 6-0676 / 6-0677	**1-0046**

HEX HEAD BOLT

Thread	Grade	Length	Part Number
3/4-16UNF	5	1.500	**N500415-9**

CAP SCREW

Thread	Grade	Length	Part Number
1/4X9/16			**6029562**

SOCKET HEAD CAP SCREW

Thread	Grade	Length	Part Number
5/16-24UNF	8	1.250	**37050X**
5/16-24UNF	8	2.250	**37059X**

SET SCREW

Thread	Grade	Length	Part Number
3/8-16		0.750	**50-0449**

SHAFT NUT

Tap Size	Width Across Flats	Thick-ness	Part Number
1 1/4-18UNEF	1.625	0.630	**N231502**
1-20UNEF	1.280	0.563	**N16-74-101**

FLINGER

Inside Dia.	Outside Dia.	Part Number
1.495	1.62	**N230933**
1.495	1.62	**N231259**
2.938	4.75	**N230794**
2.938	4.81	**N98-1361**
2.938	5.22	**N230795**
2.969	4.8	**N231015**
3.141	5.56	**N230640**

SMALL PARTS

WASHER

Inside Dia.	Outside Dia.	Thickness	Part Number
0.750	1.25	0.190	**N500357-17**
0.813	1.75	0.190	**N230129**
1.281	2.75	0.125	**N230123-6**

DRIVE SHAFT BOOT

Part Number
N2112504
N2114274

BALL SEAL

DL Series	Part Number
—	**N2-86-1298**
1310 thru 1350	**N2-86-418**

SNAP RING

THICK-NESS	USED WITH UJ	Part #
0.062	1-6300/1-6301	**1-1771**
0.089	2-3011/2-3111	**1-8297**
—	1-0170	**1-1077**

LUBE FITTING

Standard **Flush**

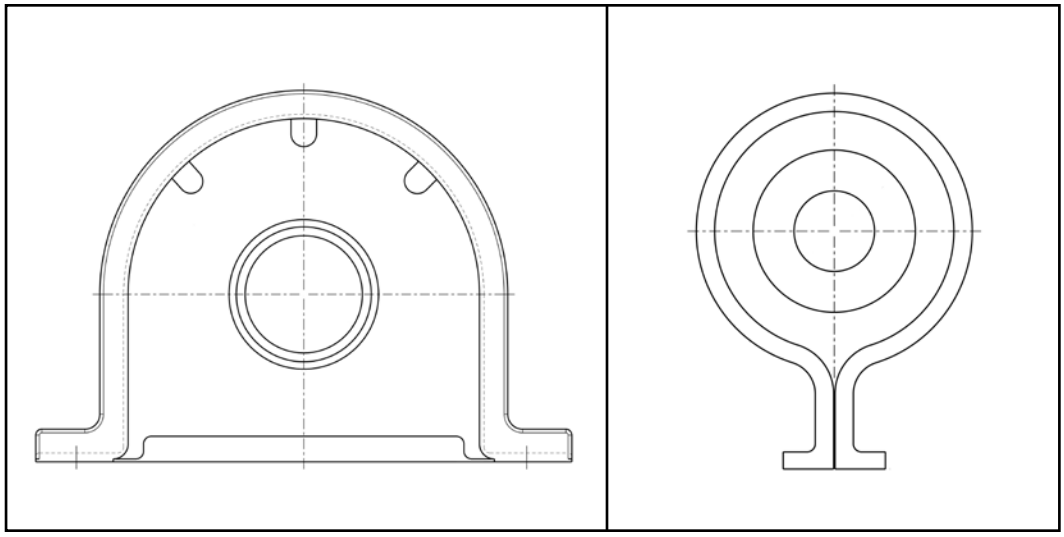
Thread Diameter	Overall Length	Type	Part Number
1/4-28NF Tapered	0.44	Flush	**2915**
1/4-28NF Tapered	0.59	Standard	**0641-B**
1/4-28NF Tapered	0.78	Standard	**3010-B**
1/4-28UNF	0.44	Standard	**1891-1SP**
1/4-28UNF	0.47	Standard	**1981**
1/8 PTF	0.69	Standard	**0610-B**
1/8 PTF	0.84	Standard	**0612-B**
10-32NF	0.34	Flush	**2920**

DRIVE SHAFT CENTERING TOOL

DL Series	Used With UJ	Part Number
1000	1-0170	**1000**
1100	1-0300	**1100**
1110	1-0105/ 1-0248	**1110**
1113	N/A	**1113**
1151	1-0028	**1151**
1210	1-0443	**1210**
1251	1-0027	**1251**
1310	1-0153	**1310**
1330	2-4800	**1330**
1350	2-0053	**1350**
1351	1-1612	**1351**
1410	2-0054	**1410**
1418	N/A	**1418**
1480	3-0188	**1480**
1505	3-0055	**1505**
1550	3-0155	**1550**
1551	TBD	**1551**
1600/1610	4-0279	**1600/1610**
1650	4-0165	**1650**
1700/1710	5-0280	**1700/1710**
1760	6-0407	**1760**
1800	6-0124	**1800**
1810	6-0281	**1810**
1880	6-0308	**1880**
2351	1-0013	**2351**
2C	1-2171	**2C**
2R	1-3600 / 1-3650	**2R**
3C	3-3152	**3C**

DL Series	Used With UJ	Part Number
3R	2-3011	**3R-B**
44R	3-0044	**44R**
4C	3-4138	**4C**
5380	3-0056	**5380**
55N	3-0045	**55N**
58WB	4-5800	**58WB**
5C	4-5122	**5C**
6C/62N	4-6143	**6C/62N**
7260	1-6301	**7260**
7290	2-1175	**7290B**
7C/72N	5-7205	**7C/72N**
8.5C	6-8514	**8.5C**
8C/82N	6-8205	**8C/82N**
9C/92N	6-9014 / 6-9016	**9C/92N**
D56/148N	3-6700	**D56/148N**
L12N	1-1275	**L12N**
L14N	1-2075	**L14N**
L16N/35N	2-2275	**L16N/35N**
L6N	1-1475	**L6N**
NPL-170	6-1170	**SPL-170**
NPL-250	6-1250	**SPL-250**
NPL-90	4-1090	**SPL-90**
O55/141N	2-6600	**055/141N**
PL-140	TBD	**SPL-140**
R55/135N	2-6200	**R55/135N**
RPL-20	TBD	**RPL-20**
RPL-25	TBD	**RPL-25**
S55/131N	1-5900	**S55/131N**
U56/155N	3-6800	**U56/155N**

NOTES

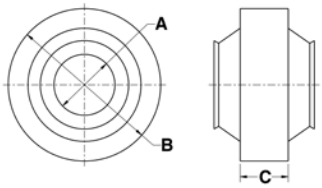


11 Center Support

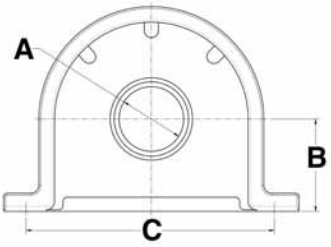
- Dimensional Listing

CENTER SUPPORT

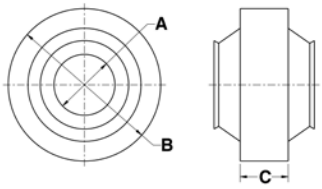
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
0.984	25	—	—	—	**N227021**



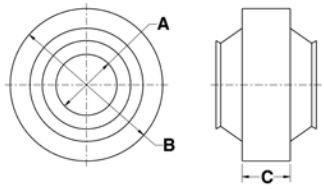
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
0.984	25	0.98	6.46	0.47 X 1.18	**N214201**



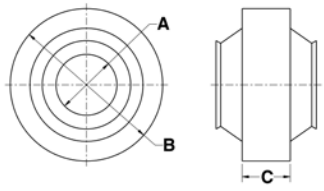
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	—	—	**N212801**

CENTER SUPPORT

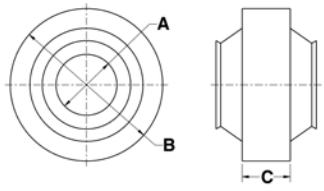
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	—	—	**N212802**



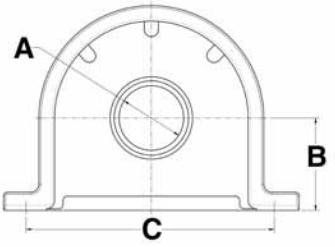
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	—	—	**N212803**



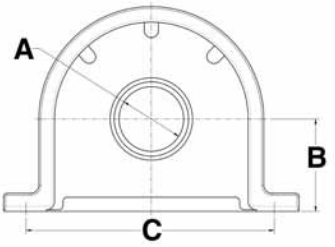
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	—	—	**N212804**

CENTER SUPPORT

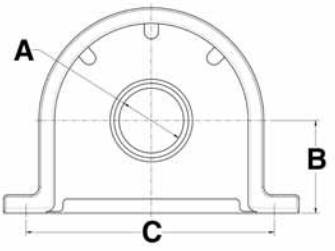
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	5.83	M8X1.25 Nuts	**N213801**



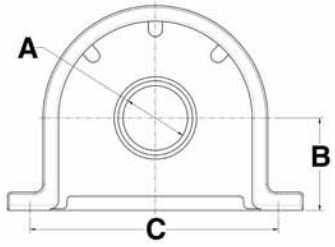
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	5.93	M10X1.25 Nuts	**N213803**



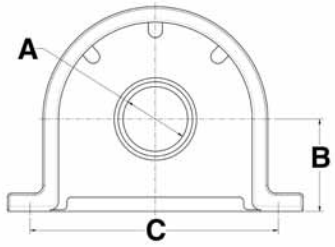
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	5.93	M10X1.25 Nuts	**N213804**

CENTER SUPPORT

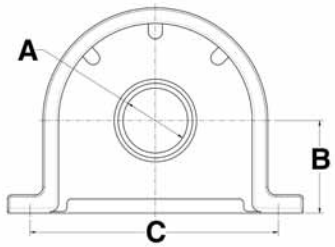
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	—	9.06	0.91 Sq. Holes	**N213802**



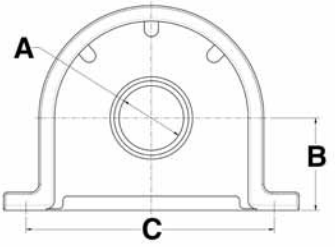
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0	6.48	0.43 X 0.55	**N227030**



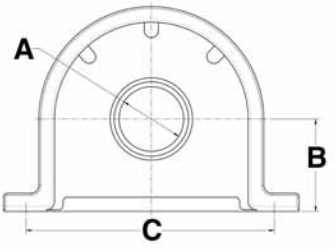
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0	6.48	0.43 X 0.69	**N216801**

CENTER SUPPORT

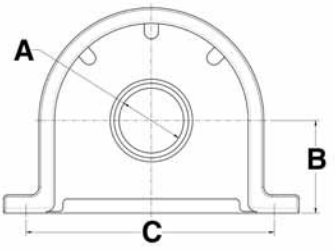
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0.28	5.83	0.57 X 1.18	**N213805**



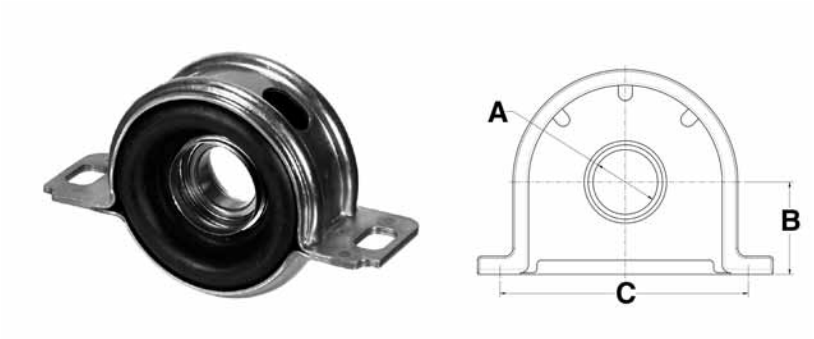
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0.28	5.83	0.57 X 1.18	**N213807**



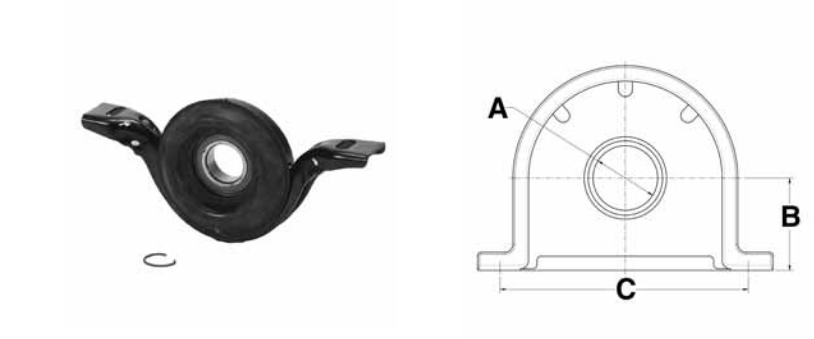
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0.43	5.87	0.57 X 1.18	**N223804**

CENTER SUPPORT

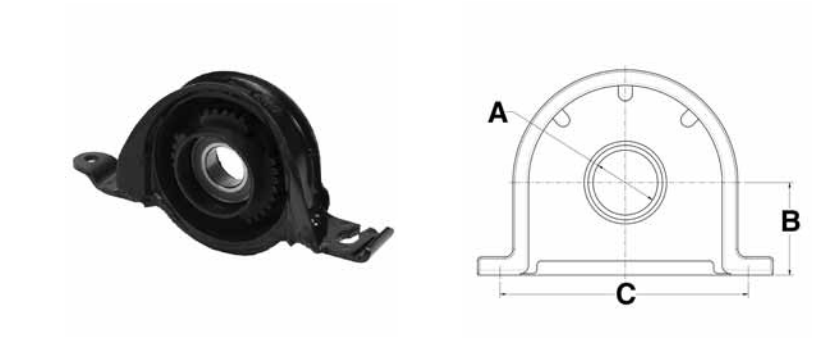
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	0.71	5.87	0.59 X 0.91	**N223802**



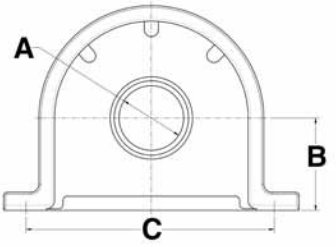
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	1.06	7.48	0.33 X 0.91	**N214826**



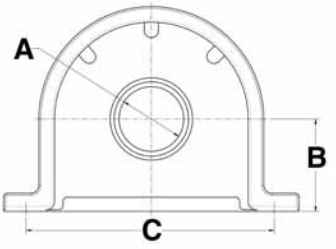
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	1.44	6.91	0.52 X 0.78	**N229385**

CENTER SUPPORT

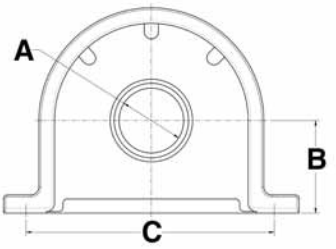
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	1.81	6.34	0.35 X 1.18	**N227806**



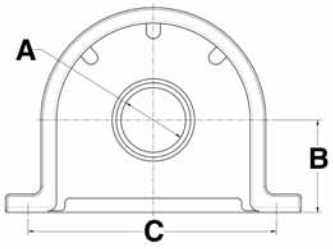
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	1.91	5.79	0.59 X 0.63	**N211590-1X**



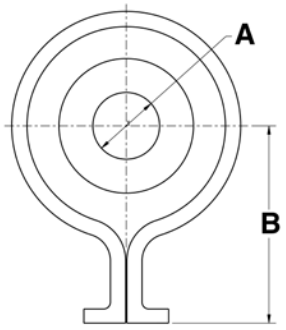
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	2.09	5.13	0.39 X 1.18	**N217001**

CENTER SUPPORT

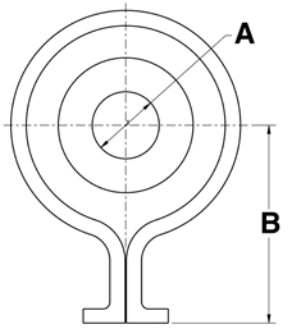
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	3.31	3.70	M12X1.5 Nuts	**N215501**



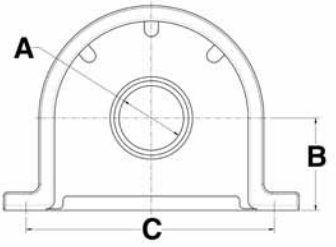
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	3.50	1.50	M10X1.5	**CN210527X**



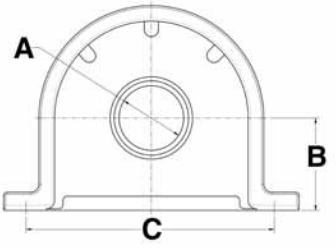
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	3.50	1.50	M10X1.5	**N210527X**

CENTER SUPPORT

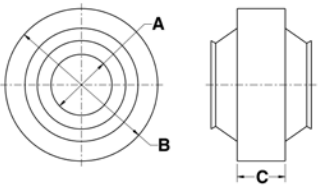
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.181	30	3.58	3.72	M12X1.5	**N227033**



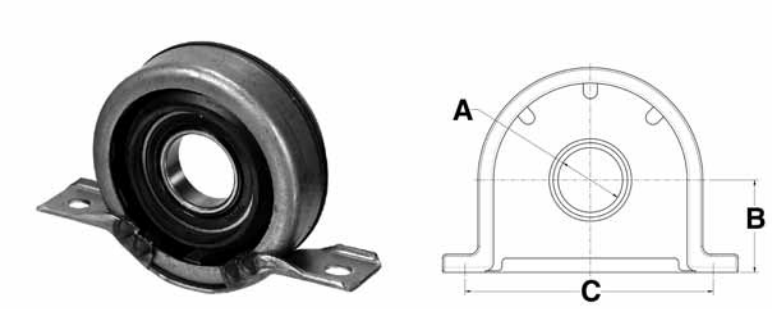
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.260	32	1.89	5.87	0.61 X 0.67	**N211431X**



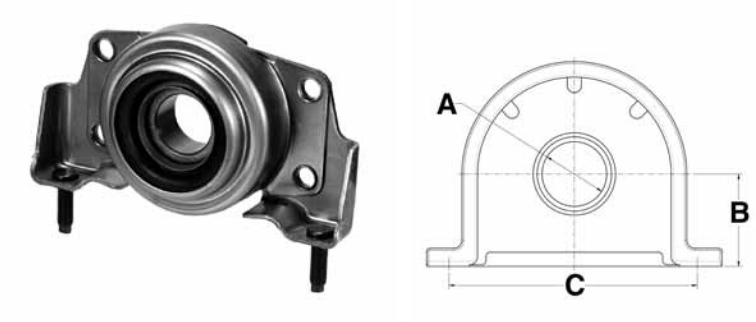
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	—	—	—	**N212050X**

CENTER SUPPORT

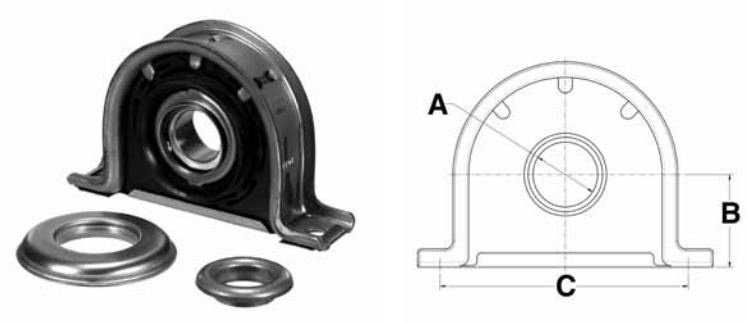
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	1.46	5.35	0.41 & 0.41x0.47	**N217390**



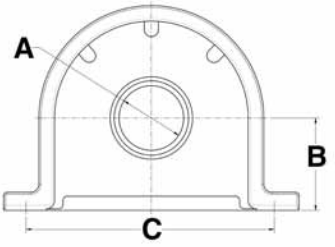
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.20	6.62	M10X1.5 Studs	**N217020**



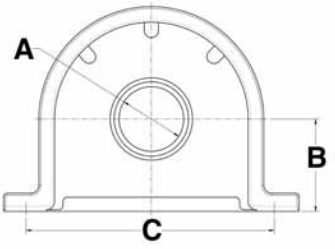
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**CN210088-1X**

CENTER SUPPORT

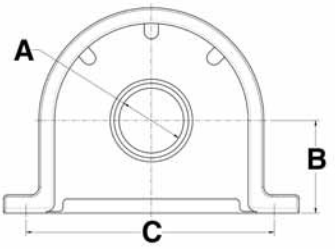
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**N210088-1X**



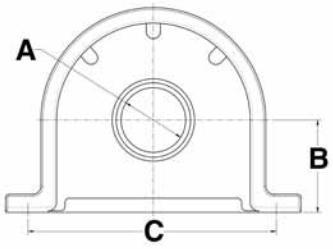
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**CN210090-1X**



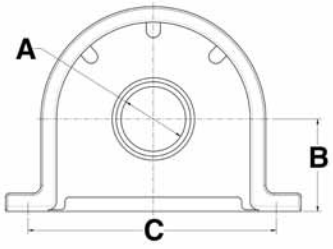
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**N210090-1X**

CENTER SUPPORT

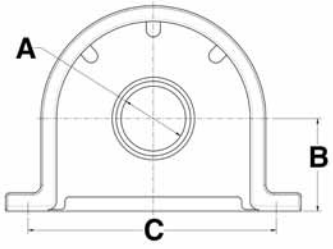
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**CN210367-1X**



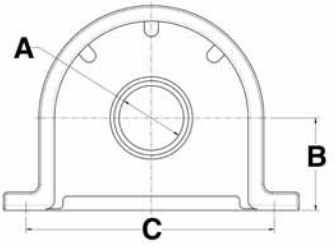
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**N210367-1X**



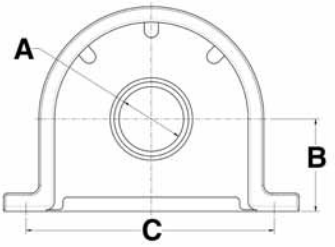
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**CN210370-1X**

CENTER SUPPORT

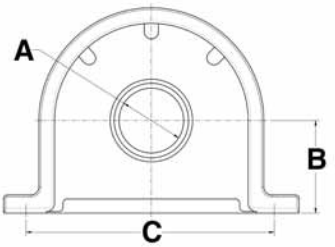
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**N210370-1X**



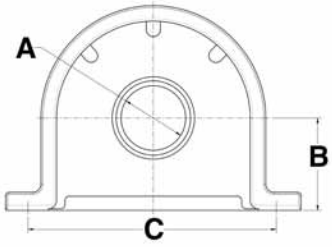
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.61	0.51 X 0.56	**N211036-2X**



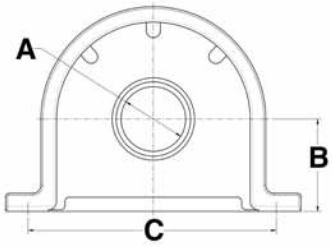
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.62	0.55	**N211139X**

CENTER SUPPORT

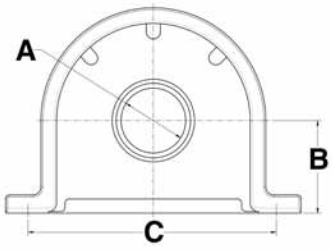
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.24	6.62	0.55	**N211187X**



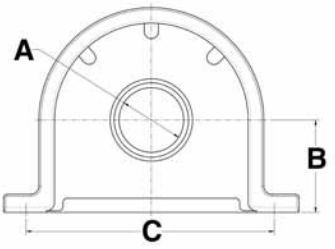
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.25	6.63	0.51 X 0.57	**N217042**



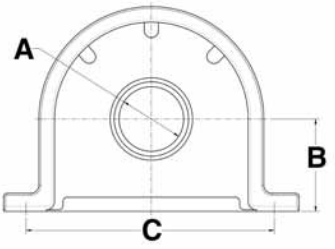
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.378	35	2.70	6.62	0.52 X 0.56	**N211985X**

CENTER SUPPORT

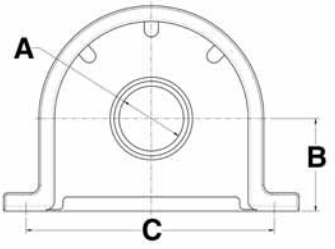
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.23	6.62	M10X1.5 Studs	**N212028-1X**



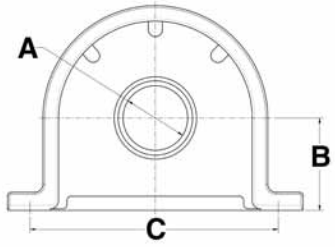
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.61	0.50 X 0.55	**CN210866-1X**



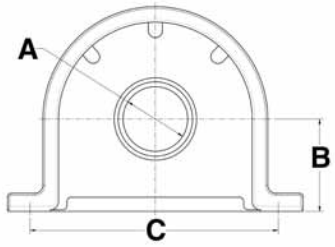
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.61	0.50 X 0.55	**N210866-1X**

CENTER SUPPORT

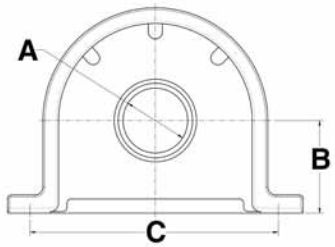
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.61	0.50 X 0.55	**CN210873-1X**



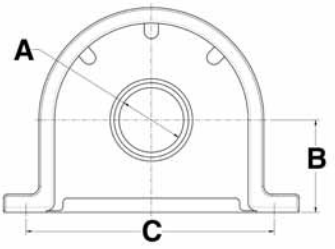
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.61	0.50 X 0.55	**N210873-1X**



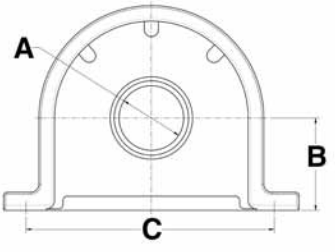
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.61	0.50 X 0.55	**N211016X**

CENTER SUPPORT

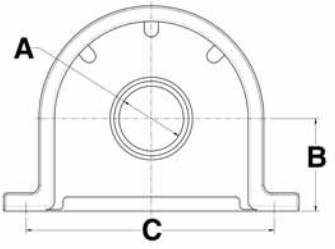
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.24	6.62	0.50 X 0.57	**N235150**



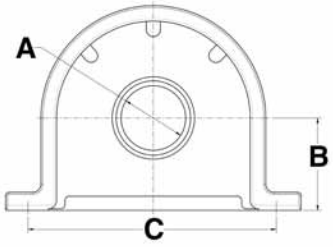
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.25	6.63	0.51 X 0.57	**N217334**



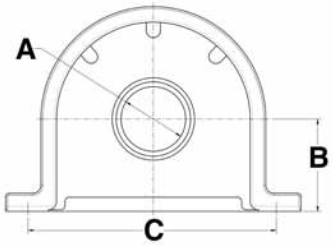
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.28	6.62	0.50 X 0.57	**N235200**

CENTER SUPPORT

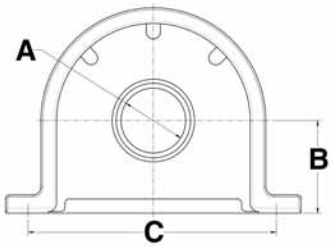
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**CN210140-1X**



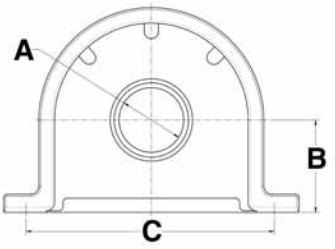
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N210140-1X**



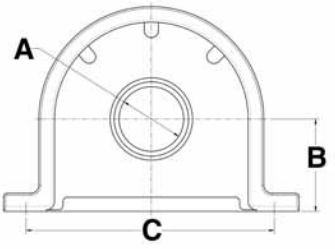
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**CN210144-1X**

CENTER SUPPORT

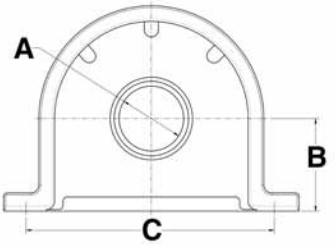
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N210144-1X**



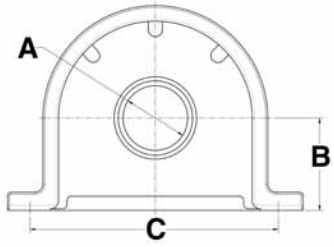
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**CN210391-1X**



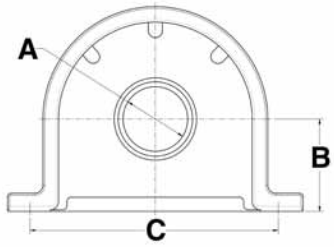
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N210391-1X**

CENTER SUPPORT

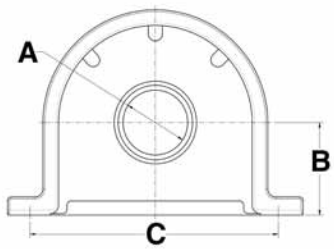
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**CN210433-1X**



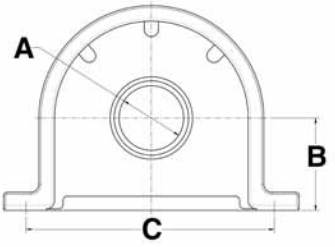
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N210433-1X**



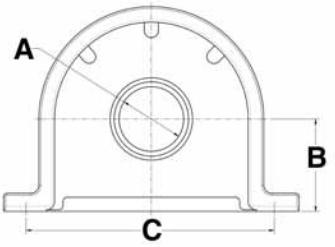
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N211037-1X**

CENTER SUPPORT

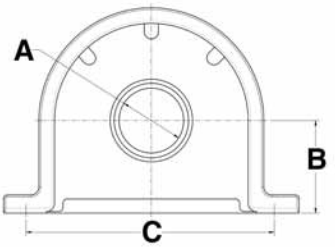
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.50	6.63	0.56	**N211098-1X**



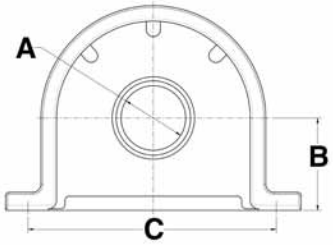
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	2.60	6.62	M10X1.5 Stud	**N212032-1X**



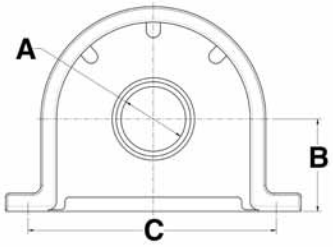
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.575	40	3.25	3.39	0.44-14 Nut	**N211848-1X**

CENTER SUPPORT

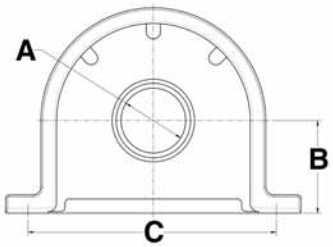
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.64	7.64	0.53 X 1.19	**N214574**



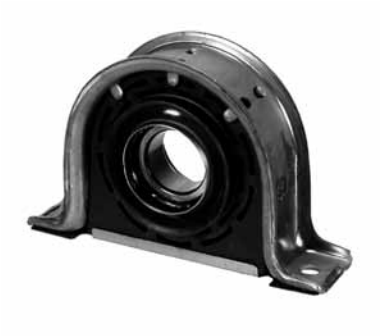
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**CN210084-2X**

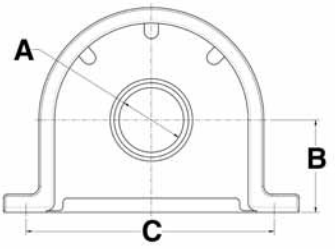


A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**N210084-2X**

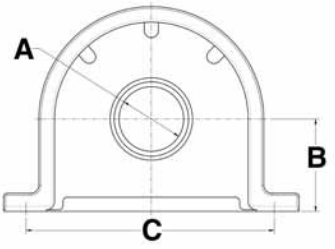
CENTER SUPPORT

DIMENSIONAL REFERENCE

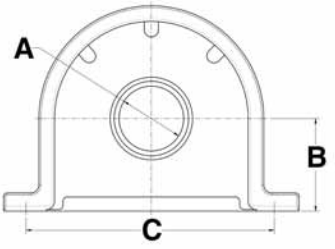




A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**N210130-1X**



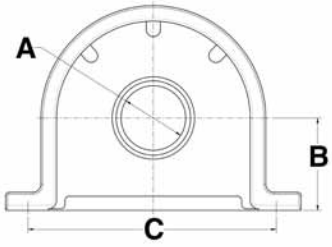
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**CN210207-1X**



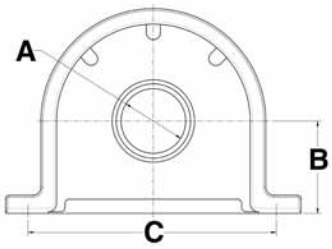
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**N210207-1X**

CENTER SUPPORT

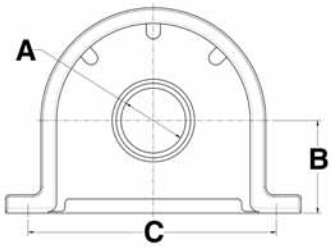
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**CN210969X**



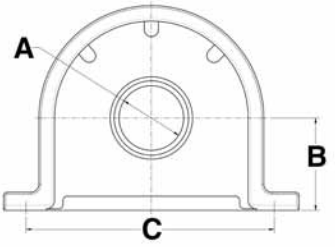
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**N210969X**



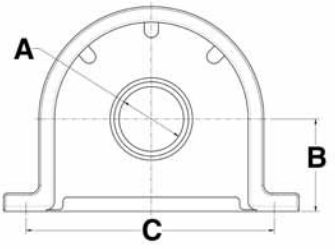
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.72	7.62	0.56	**N211172-1X**

CENTER SUPPORT

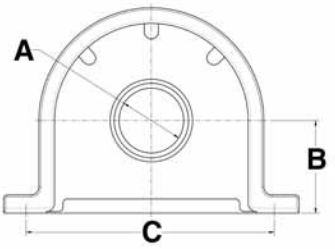
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.772	45	2.77	7.62	0.52 X 0.57	**N212134-1X**



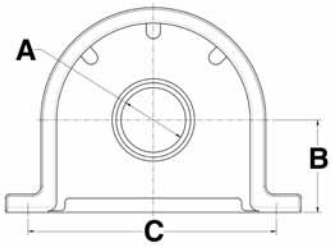
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.968	50	2.80	7.62	0.52 X 0.62	**CN210121-1X**



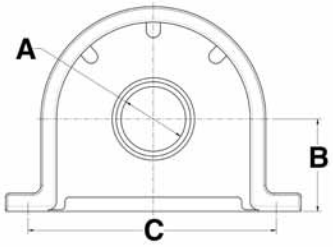
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.968	50	2.80	7.62	0.52 X 0.62	**N210121-1X**

CENTER SUPPORT

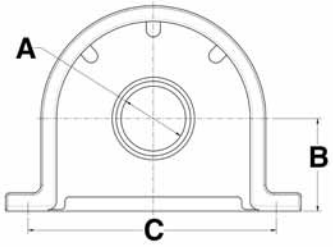
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.968	50	2.80	7.62	0.52 X 0.62	**N210121-1XSA**



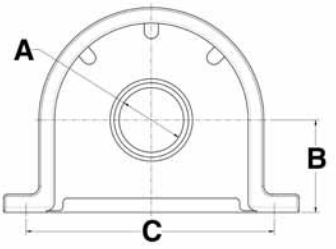
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.968	50	2.80	7.62	0.52 X 0.62	**CN210881-1X**



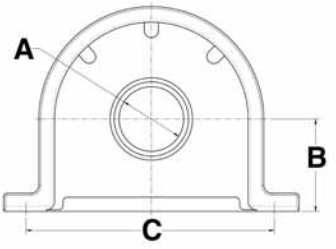
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
1.968	50	2.80	7.62	0.52 X 0.62	**N210881-1X**

CENTER SUPPORT

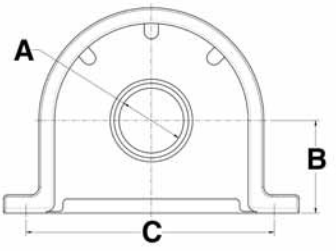
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**CN210661-1X**



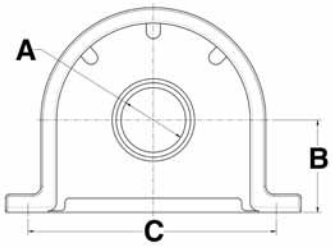
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**N210661-1X**



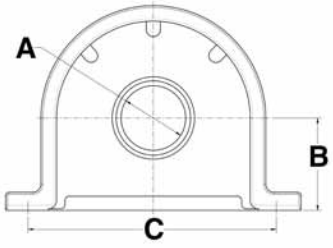
A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**N210661-1XSA**

CENTER SUPPORT

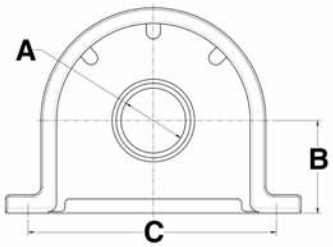
DIMENSIONAL REFERENCE



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**CN210875-1X**

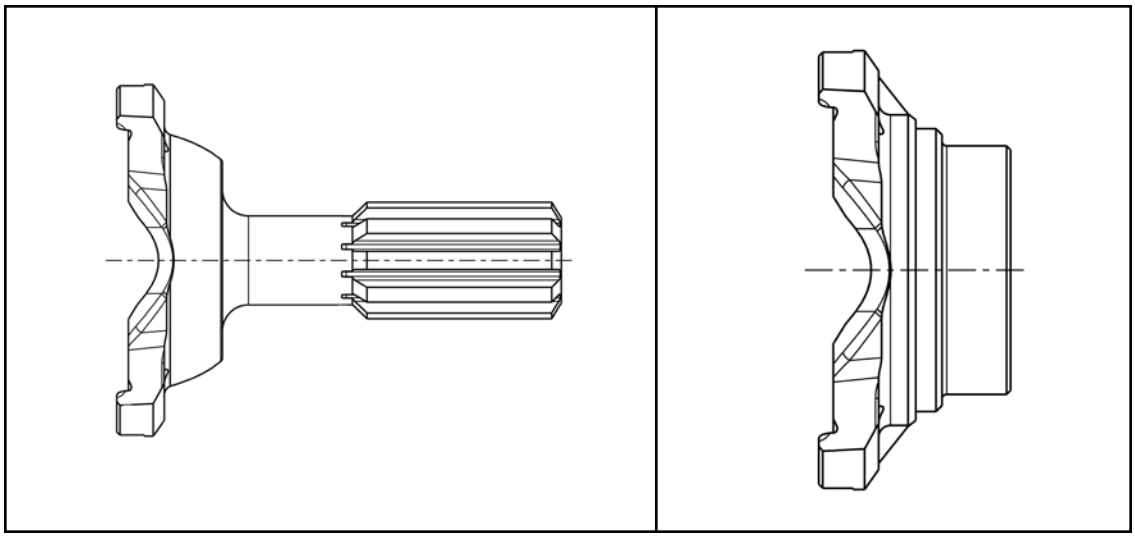


A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**N210875-1X**



A Bore Inches	A Bore MM	B CL Of Bearing To Face	C CL To CL Of Mounting	Bolt Hole Diameter	Part Number
2.362	60	3.37	8.62	0.63 X 0.75	**N210875-1XSA**

NOTES

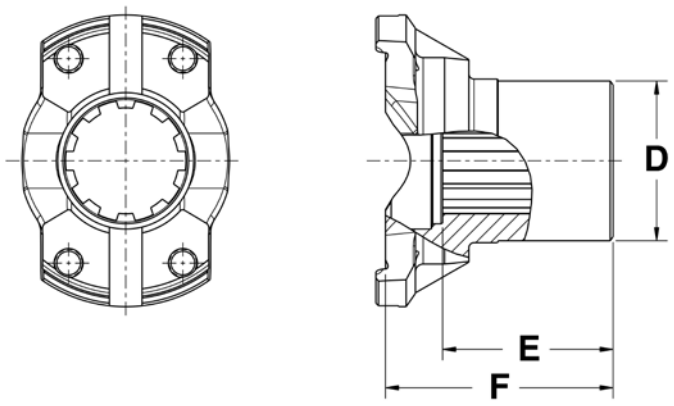


12 Wing Bearing Driveline Products

- End Yoke
- Slip Yoke
- Stub Shaft
- Tube Weld Yoke
- Yoke Shaft

WING BEARING

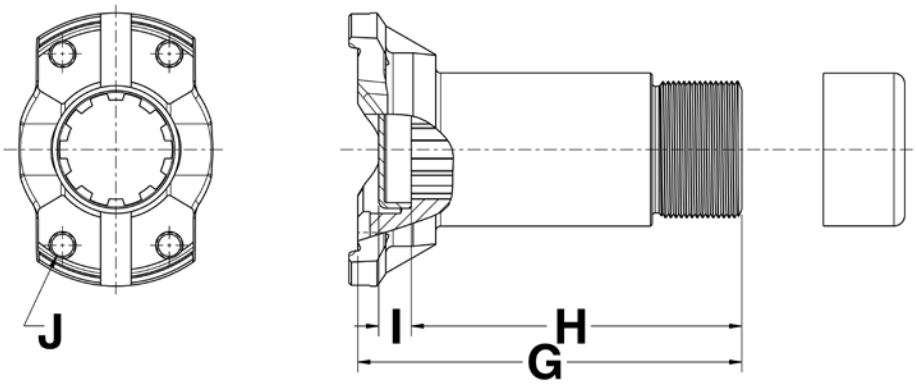
END YOKE



DL Series	Spline / Number Teeth	E Length Of Spline	F Face To End	D Hub Dia.	Part Number
7C Series					
7C	1.750-10	2.25	3.50	2.19	**10508J**

WING BEARING

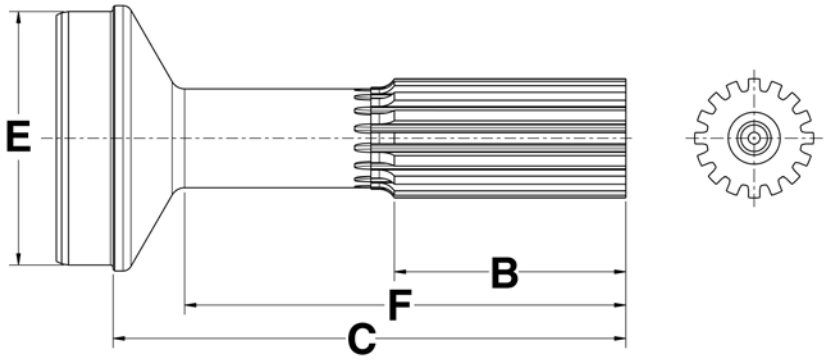
SLIP YOKE



DL Series	Spline / Number Teeth	G Overall Length	H Length To Dust Cap	I Welch Plug	J Hole/ Thread Size	Part Number
3C Series						
3C	1.250-16	4.28	4.06	0.56	0.31-24	**3-70867**
4C Series						
4C	1.375-16	5.56	5.00	0.28	0.31-24	**4-69874**
5C Series						
5C	1.500-10	5.38	5.00	0.69	0.41	**6-5000**
5C	1.560-16	5.62	5.00	0.50	0.38-24	**5-67747**
6C Series						
6C	1.750-10	5.62	5.17	0.92	0.41	**6-6000**
6C	1.750-16	8.88	8.00	0.50	0.38-24	**6-67781**
6C	1.750-16	9.50	8.00		0.41	**6-6047**
7C Series						
7C	2.000-10	7.06	6.56	0.75	0.47	**6-7000**
7C	2.000-10	9.62	7.75		0.47	**6-7039**
7C	2.000-16	7.12	6.38	0.50	0.50-20	**6-67820**
8C Series						
8C	2.500-16	10.62	9.50	0.59	0.50-20	**8-78503**
8.5C Series						
8.5C	2.500-16	8.62	7.50	0.69	0.50-20	**85-67843**
9C Series						
9C	3.000-16	9.62	8.37	1.06	0.50-20	**9-67847**
10C Series						
10C	3.400-32	12.00	10.25		0.63-18	**10-80258**
15C Series						
15C	3.900-37	13.75	11.5	0.62	0.75-16	**15-73394**

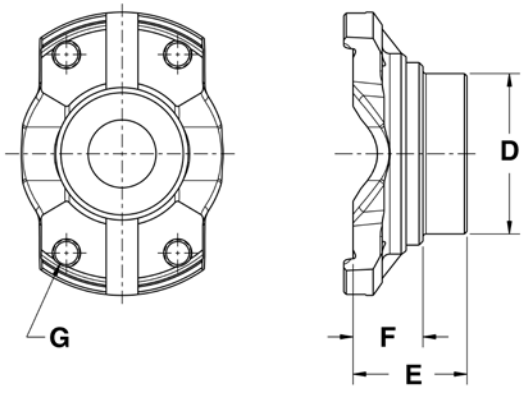
WING BEARING

STUB SHAFT



Spline / Number Teeth	Tubing Diameter And Wall	E Butt Dia.	B Length Of Spline	F End Of Spline To Radius	C End Of Spline To Weld	Part Number
1.19-16	2.00X.065	1.88	1.92	4.53	5.28	**2-61614**
1.38-10	2.50X.083	2.34	2.25	5.19	6.13	**3666J**
1.38-16	2.50X.083	2.34	2.77	5.62	6.50	**4-61738**
1.50-10	2.50X.095	2.32	3.00	5.84	6.75	**3545J**
1.56-16	2.50X.109	2.29	2.76	5.38	6.38	**5-61729**
1.75-10	3.00X.095	2.82	3.00	6.00	7.00	**3670J**
1.75-10	3.50X.095	3.32	3.00	5.97	7.13	**9146J**
1.75-16	3.00X.095	2.82	2.77	—	7.00	**6-61725**
1.75-16	3.00X.095	2.82	2.77	—	9.75	**6-61747**
1.75-16	3.50X.095	3.32	2.77	8.50	9.63	**17072J**
2.00-10	3.50X.095	3.32	3.72	7.38	8.50	**9281J**
2.00-10	3.50X.095	3.32	7.13	8.41	9.38	**9276J**
2.00-16	3.50X.120	3.27	3.74	7.13	8.50	**7-61726**
2.00-16	3.50X.120	3.27	3.74	9.62	11.00	**7-70825**
2.50-16	4.00X.187	3.63	4.22	8.56	10.00	**8-61737**
3.00-16	4.50X.250	4.01	5.38	9.44	11.19	**9-61716**
3.40-32	5.00X.375	4.25	5.65	11.00	12.43	**10-79981**
3.90-37	6.50X.375	6.13	6.12	12.25	14.19	**15-76182**

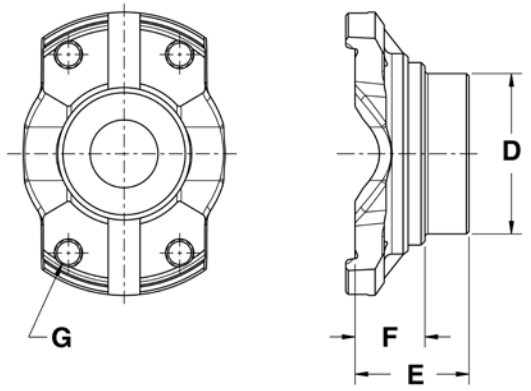
WELD YOKE



DL Series	Tubing Dia. And Wall	Butt Dia.	E Face To End Of Hub	F Face To Weld Point	G Hole/ Thread Size	Part Number
2C Series						
2C	2.000X.065	1.88	1.38	1.00	0.34	**2-65133**
3C Series						
3C	2.500X.083	2.34	1.88	1.25	0.31-24	**3-65418**
4C Series						
4C	2.500X.083	2.34	1.88	1.25	0.31-24	**4-65197**
5C Series						
5C	2.500X.095	2.32	1.88	1.12	0.41	**5-65119**
5C	2.500X.109	2.29	1.88	1.12	0.38-24	**5-65188**
5C	2.500X.109	2.29	1.88	1.12	0.41	**5-65138**
6C Series						
6C	3.000X.095	2.82	2.50	1.88	0.38-24	**6-65182**
6C	3.000X.095	2.82	2.50	1.88	0.41	**6-65122**
6C	3.500X.095	3.32	2.50	1.88	0.41	**6-65180**
7C Series						
7C	3.500X.095	3.32	2.75	2.12	0.47	**7-65172**
7C	3.500X.120	3.27	2.75	2.12	0.47	**7-65186**
7C	3.500X.120	3.27	2.75	2.12	0.50-20	**7-65230**
8C Series						
8C	4.000X.187	3.63	3.69	2.69	0.50-20	**8-65262**
8.5C Series						
8.5C	4.000X.187	3.63	2.88	2.12	0.50-20	**85-74020**
9C Series						
9C	4.500X.250	4.01	3.25	2.50	0.50-20	**9-65288**

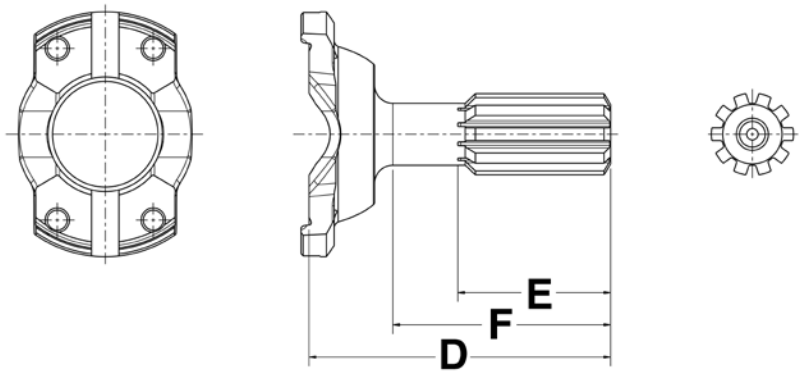
WING BEARING

WELD YOKE (Cont'd)



DL Series	Tubing Dia. And Wall	Butt Dia.	E Face To End Of Hub	F Face To Weld Point	G Hole/ Thread Size	Part Number
15C Series						
15C	6.500X.375	5.76	5.00	4.00	0.75-16	**15-76185**

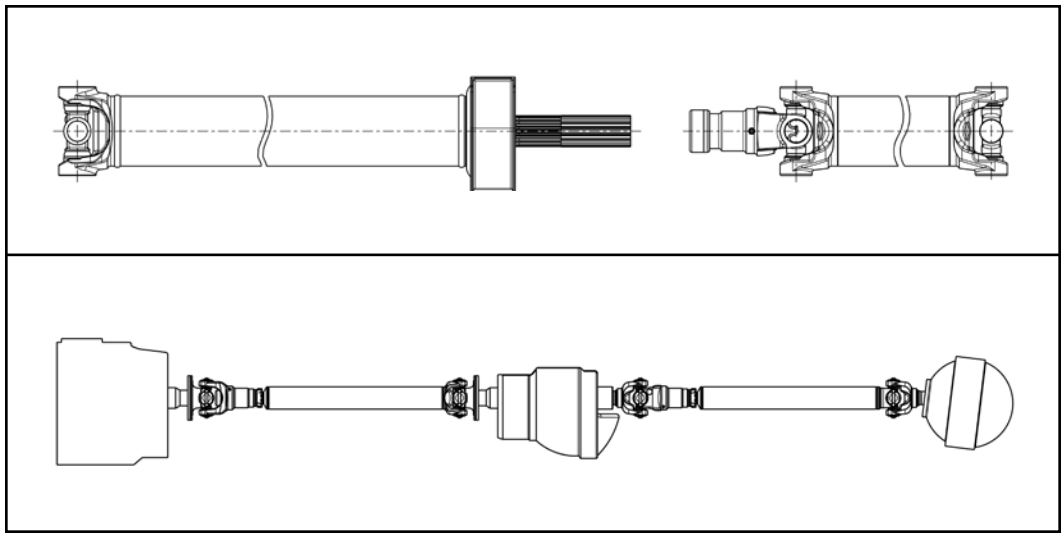
YOKE SHAFT



DL Series	Spline / Number Teeth	D Overall Length	E Length Of Spline	F End Of Spline To Radius	Part Number
7C	2.000-10	7.00	2.84	5.25	**5505J**

WING BEARING

NOTES



13 General Information

- Universal Joints
- Driveline Components
- Driveline Fabrication
- Aluminum Components
- PTO Components
- Troubleshooting
- Glossary

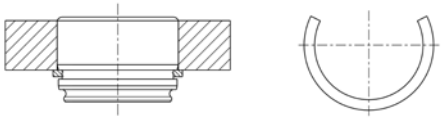
Neapco Driveline Component Part Numbering System

EXAMPLE: N6-3-2651KX

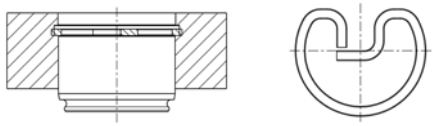
Neapco Series ID	_	Description	_	Part Number	_	Additional Items
Ex: N6	_	**3**	_	**2651**	_	**KX**
1710 Series	_	***Slip Yoke***	_	***Part No.***	_	***Dust Cap***

SERIES ID NO.	SERIES
N10	1000
N2	1310
	1330
N3	1350
	1410
	1480
N3R	3R or S44
N4	1550
N5	1610
N6	1710
N6.3	1760
N6.5	1810
N729	7290

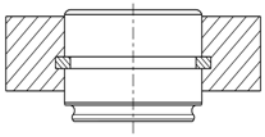
Typical Methods Of Universal Joint Lock-up



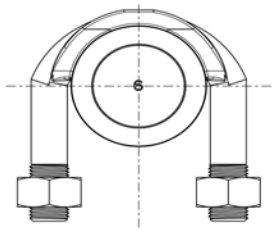
INSIDE



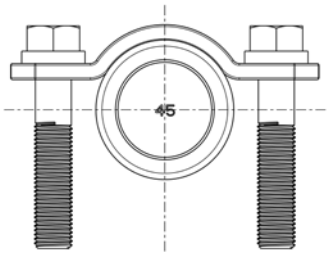
OUTSIDE



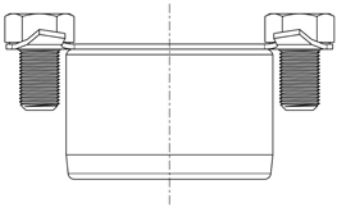
PLASTIC INJECTION



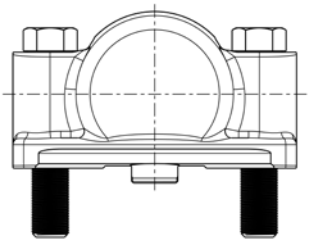
U-BOLT



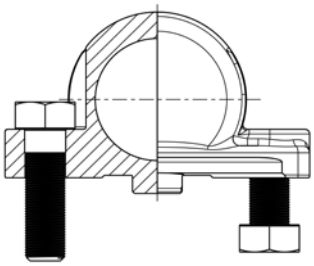
BEARING STRAP



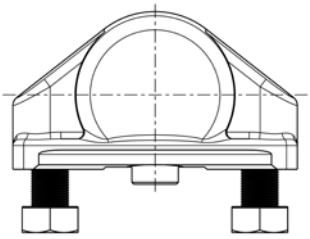
RETAINER PLATE



DRILLED BLOCK BEARING



WING BEARING: 1 DRILLED, 1 THREADED

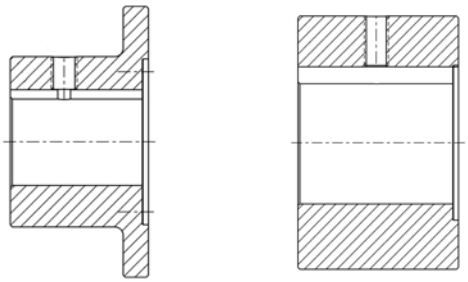


THREADED DELTA WING BEARING

GENERAL INFORMATION

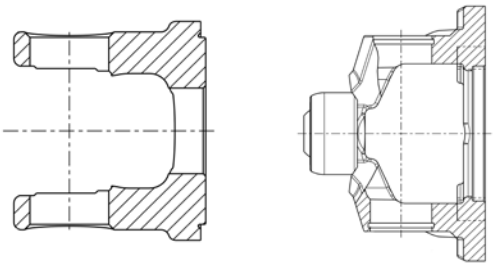
Neapco Driveline Components

SECTION NUMBER (ID NUMBER) AND DESCRIPTION



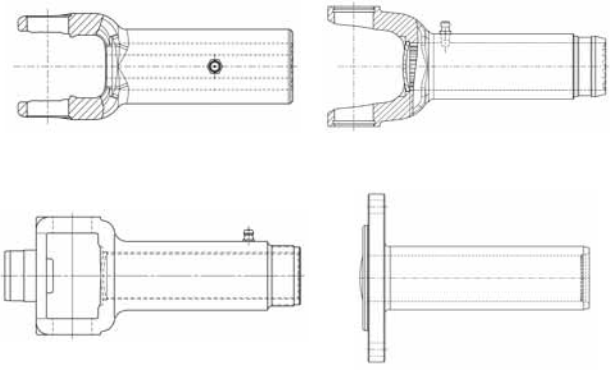
Section 1

(1) Companion Flange



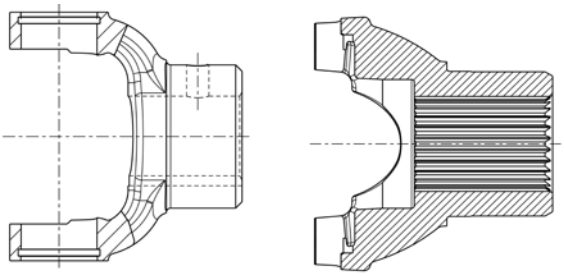
Section 2

(2) Flange Yoke (83) Flange Socket Yoke



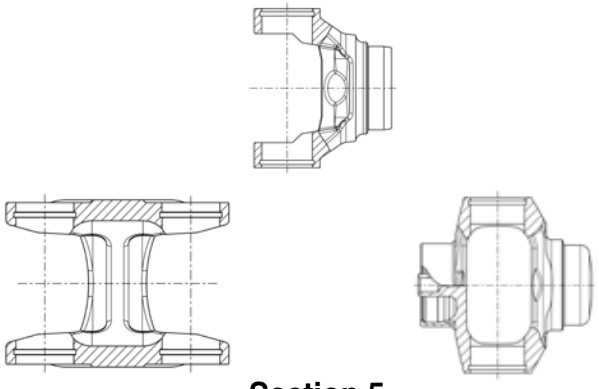
Section 3

(3) Slip Yoke (23) Flange Sleeve



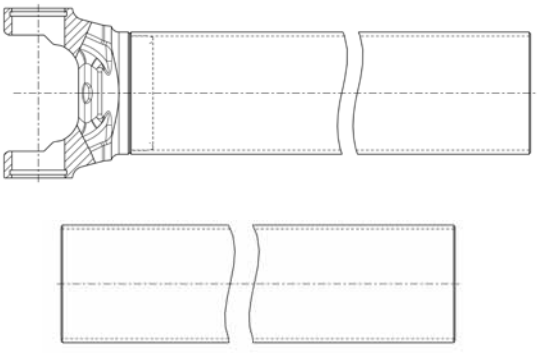
Section 4

(4) End Yoke



Section 5

(26) H-Yoke (26) or (28) Tube Yoke (28) Ball Stud Yoke

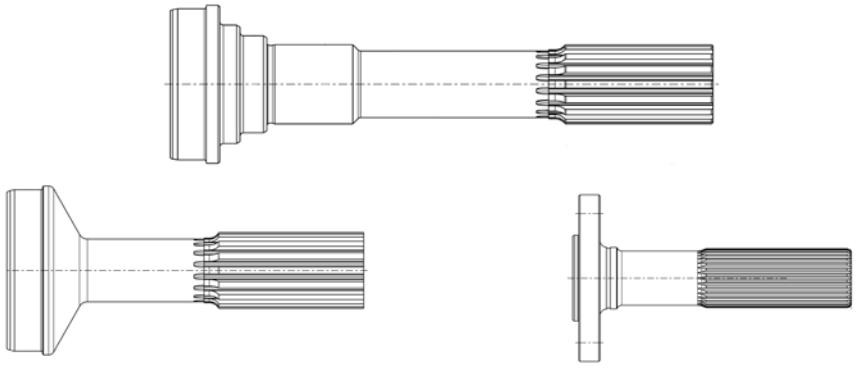


Section 6

(27) Yoke and Tube Assembly (30) Tubing

Neapco Driveline Components

SECTION NUMBER (ID NUMBER) AND DESCRIPTION

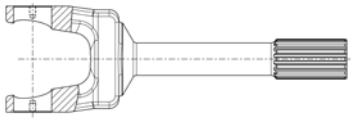


Section 7

(40 &42) Stub Shaft

(53 & 54) Midship Stub Shaft

(81) Flange Stub



Section 8

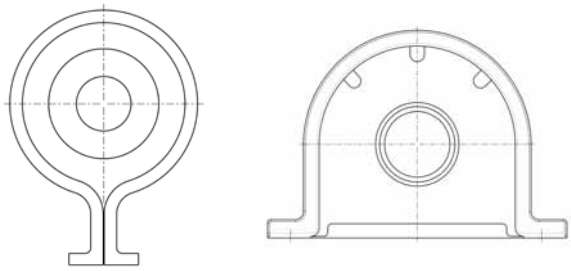
(82) Yoke Shaft

- Unwelded Driveshaft Assemblies
- Unwelded Double Cardan Driveshaft Assemblies
- Welded & Balanced Driveshaft Assemblies
- 4x4 Driveshaft Components
- Double Cardan Centering Repair Kits

Section 9
Driveshaft Assemblies

- Driveline Weights
- Increasing Bushings
- Dust Seals
- Welch Plugs
- Driveshaft Boots
- Miscellaneous Fasteners
- Miscellaneous Hardware
- Centering Tools

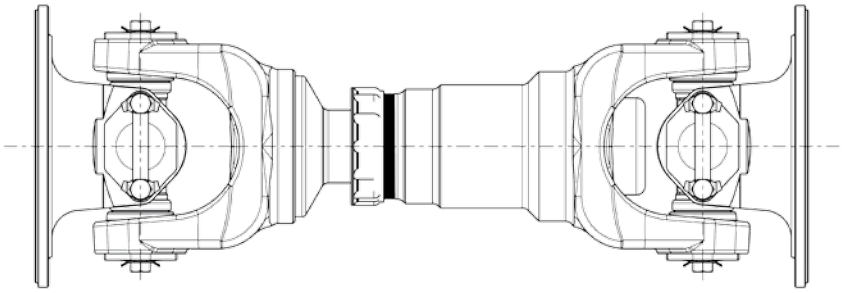
Section 10
Small Parts



Section 11
Center Support Bearings
(N2xxxxx)

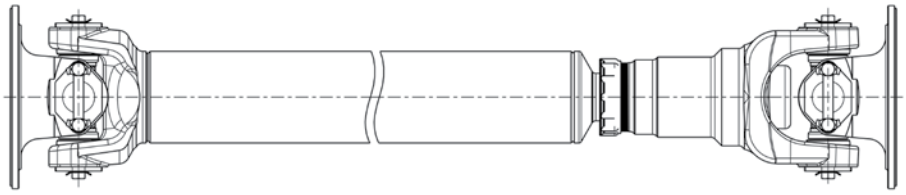
Typical Driveline Assemblies

SHORT COUPLED ASSEMBLY



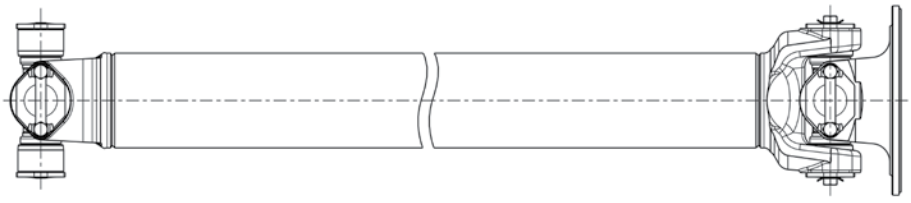
Short coupled assemblies are generally used in applications where space is limited and would not allow tubing to be utilized. A typical application would be between the axles of a tandem vehicle.

TWO JOINT ASSEMBLY



Two joint assemblies are used in applications that require the shaft assembly to lengthen and shorten due to movement by either or both of the connecting ends. A short wheel base vehicle is a typical application.

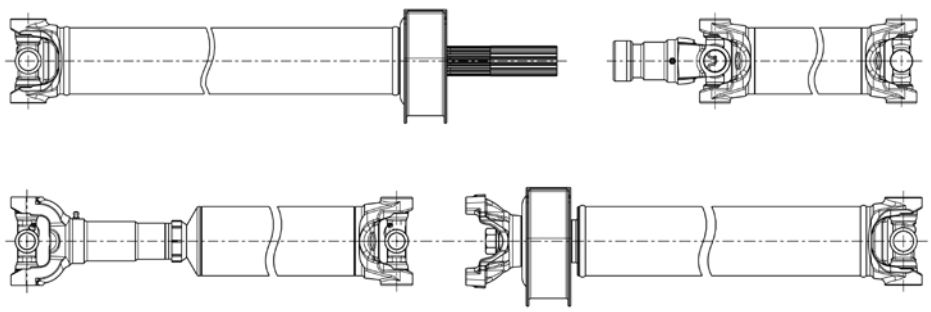
TIGHT JOINT ASSEMBLY



Tight joint assemblies are used in applications that do not require slip movement. They can be used by themselves or in a multiple-shaft set up. An example would be the middle shaft of a three piece arrangement.

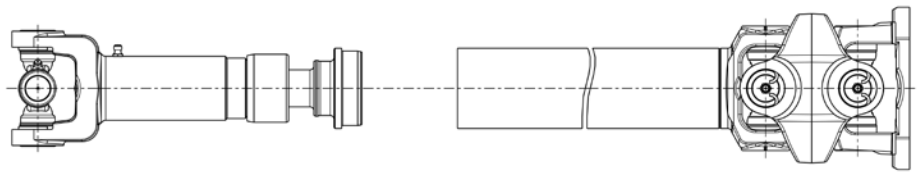
Typical Driveline Assemblies

CENTER BEARING STYLE



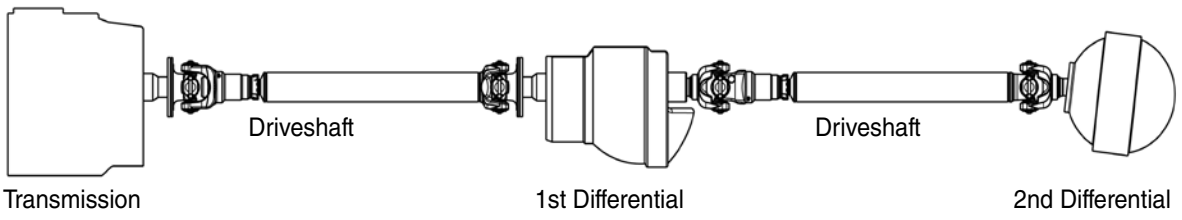
Shaft assemblies that use center bearings are typically used to span lengths beyond the capability of a single shaft. A minimum of one shaft assembly will have the ability to provide slip movement. An example is the main driveshaft of most medium duty straight chassis.

CV SHAFT ASSEMBLY



CV shaft assemblies are used in applications that require operating angles beyond the capability of standard single u-joints. The most common application is the front shaft of a 4 x 4 vehicle.

TYPICAL DRIVELINE ARRANGEMENT



Basic Driveline Design Procedures & Precautions

In order to get the optimum service life out of any driveline and its components, it is important to start out with a driveline which is right for the application, and an application which allows the use of drivelines in their acceptable working ranges. There are five key elements that must be considered when building a driveline.

1 -OPERATING SPEEDS -TABLES I & II
2 -OPERATING LOADS OR TORQUES -TABLE II
3 -OPERATING U-JOINT ANGLES -TABLE III
4 -LENGTH OF DRIVELINE -TABLE 1
5 -DRIVELINE BALANCE

Each of these elements, separately or in conjunction with each other, can lead to driveline problems and/or failure when not matched with the driveline capabilities.

The maximum operating speed must be held somewhat below the critical speed of the driveline, — 85% for passenger cars and light duty trucks and 75% for medium and heavy-duty trucks. The critical speed is a function of the tubing O.D., the tubing wall thickness, and the centerline to centerline length of the driveshaft. Operating at or near the critical speed of a driveline will cause substantial vibration and possible failure.

The maximum load that a driveline can carry is a function of joint rating, tubing O.D. and wall thickness, and component strength.

It is generally accepted that the major limiting factor in determining allowable U-joint operating angles is speed. Good design practice is to keep operating angles within the 0.5° to 3° range. Higher angles are permissible, depending on shaft speed. Another good design practice is to keep the difference in angles between two U-joints in the same driveshaft to within 1°.

Universal joint operating angles can be determined by measuring the angles of the various components and finding the resultant. A spirit level or bubble protractor is needed to measure the component angles. Measurements should be taken on machined surfaces, and partial disassembly of the driveline may be required to expose those surfaces. Common surfaces which are used to take angle measurements are: the outside face of yoke ears, flange faces and the outside diameter of the tubing.

Before Starting

When measuring drivelines to determine U-joint angles, it is good practice to start out with a sketch showing the basic driveline and where measurements are to be taken. Before measuring any angles, the vehicle must be parked on level ground with all tires inflated to their normal operating air pressures. Block the front tires to prohibit movement and place the transmission in neutral (Make sure that the parking brake is released). It may be necessary to jack up a rear wheel so that the driveline can be rotated to get the.transmission output yoke ear parallel to the ground.

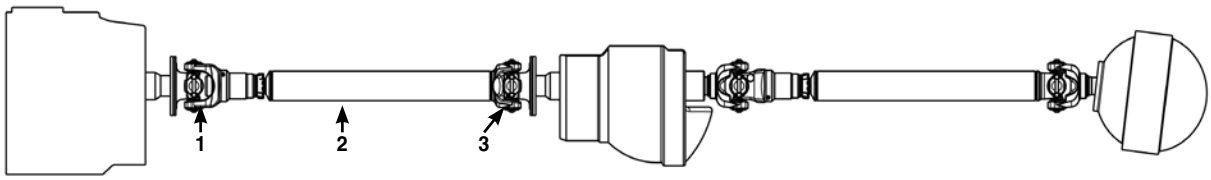
*Measure all angles on flat surfaces, which are clean and free from rust, scale or nicks.

The following is a typical procedure for determining U-joint operating angles:

1. Measure transmission output shaft angle and determine its direction (up or down), record.
2. Measure angle of driveshaft and determine its direction, record.
3. Measure angle of axle input yoke and determine its direction, record.
4. The difference between the transmission output shaft angle and the driveshaft angle is the transmission output U-joint operating angle.
5. The difference between the driveshaft angle and the axle input angle is the axle input U-joint operating angle.
6. Check difference of U-joint operating angle to make sure they are within 1° of each other.

Follow same pattern to determine U-joint angles in other driveshafts.

Below is a typical driveline arrangement and a sample U-joint angle calculation:



1. Transmission output angle = 3° (down)
2. Driveshaft angle = 4.5° (down)
3. Axle input shaft angle = 2.8° (down)
4. Difference between 3°(down) and 4.5°(down) = 1.5°This is the transmission output U-joint operating angle. (#1-#2)
5. Difference between 4.5°(down) and 2.8°(down) = 1.7°This is the axle input U-joint operating angle. (#2 -#3)
6. Difference between 1.5° and 1.7° = .2° <u>This is less than the recommended 1° maximum.</u> (#4-#5)

Table I - Driveline Centerline To Centerline

MAXIMUM LENGTH AT MAXIMUM RATED RPM BY SERIES

Series	Tube Size	Part No.	Max. RPM	Max. Length [1]
1000	2" x .083	N16-30-62	2500	54
1310	2"x 065	N16-30-32	6000	35
	2"x .083	N16-30-62	6000	35
	2"x 120	N16-30-102	6000	34
	2.5"x .065	N20-30-12	6000	39
	2.5"x .083	N20-30-22	6000	39
	2.16"x .065	N22-30-12	6000	41
	3"x .065	N24-30-82	6000	43
	3"x .083	N24-30-42	6000	43
	3.5"x .065	N28-30-42	6000	46
	3.5"x .083	N28-30-62	6000	46
1330	2.5"x .083	N20-30-22	5000	43
	3"x .065	N24-30-32	5000	47
	3"x .083	N24-30-42	5000	47
	3.5"x .083	N28-30-62	5000	51
1350	2.5'x .083	N20-30-22	5000	43
	2.75x.083	N22-30-22	5000	45
	3"x .083	N24-30-42	5000	47
	3.5"x .083	N28-30-62	5000	51
1410	3"x .083	N24-30-42	5000	47
	35"x .065	N28-30-42	5000	51
	3.5"x .083	N28-30-62	5000	51
1480	3.5"x .083	N28-30-62	5000	51
	3.5"x .095	N2&30-22	5000	50
	4"x .083	N32-30-22	5000	54
1550	3.5"x .095	N28-30-22	5000	50
	4"x .083	N32-30-22	5000	54
1610	3.5"x .134	N28-30-92	4500	53
1710	3.5"x .156	N28-30-52	4500	53
	4"x .134	N32-30-52	4500	57
	4.095"x .180	N32-30-72	4500	57
1760	4"x .134	N32-30-52	4500	57
	4.095"x .180	N32-30-72	4500	57
1810	4.5"x .134	N36-30~62	4500	60

[1] Maximum centerline to centerline using a .75 safe speed factor generally accepted for medium and heavy duty trucks.

Table II- Universal Joint Torque Ratings

SERIES	PART NUMBER	MAXIMUM OPERATING TOROUE CAPABILITY ELECTRIC MOTOR (LBS-FT)	FUEL APPLICATION (LBS-FT)	MAXIMUM RPM
1000	1-0170	75	50	2500
1210	1-0315	95	65	6000
1280	1-0350	140	95	6000
1310	1-0153	195	130	6000
1330	2-4800	220	150	5000
1350	2-0053	310	210	5000
1410	2-0054	375	250	5000
1480	3-0188	500	335	5000
1550	3-0155	640	420	5000
1610	4-0279	975	640	4500
1710	5-0280	1330	895	4500
1760	6-0407	1630	1095	4500
1810	6-0281	1850	1245	4500
3C	3-3152	295	200	5000
4C	3-4138	375	250	5000
5C	4-5122	640	425	5000
6C	4-6143	875	575	5000
7C	5-7205	1150	775	4500
8C	6-8205	1750	1175	4500
9C	6-9016	2700	1800	3000
10C	6-1007	3800	2550	2500
7260	1-6301	195	130	5000
7290	2-1175	260	175	5000
3R	2-3011	260	175	5000
5380	3-0056	340	230	5000

Table III - Operating Angles

Shaft RPM	Operating Angle	Shaft RPM	Operating Angle
1000	17°	3000	6°0’
1500	11°30’	3500	5°10’
2000	8°50’	4000	4°20’
2500	7°0’	4500	4°0’
		5000	3°20’

Basic Driveline Fabrication

TYPICAL TWO JOINT ASSEMBLY

(1310 Series)

1. Stay within the boundaries of the five key elements in the basic driveline design procedures and precautions section.

2. Select appropriate components for the application. NOTE: We will use a typical hollow spindle lathe for assembly.

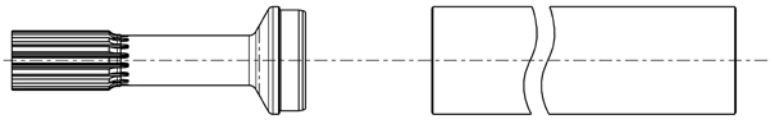
3. Cut the tubing to approximately 3/8 inch longer than the required length in a cutoff saw. Remove all burrs and weld flash from the inside of the tube.

4. Chuck the tubing in the lathe with approximately 2 inches protruding. Face the tubing to square it up, then chamfer I.D. and O.D.

5. Remove the tubing from the lathe and measure from the machined end to the required length. Scribe or mark the required length on the tube at two places (90 degree intervals).

6. Recheck the tubing with the marked end protruding from the chuck jaws approximately 2 inches. Rotate the tubing and mark the full diameter of the tube at the required length with a marker or grease pencil.

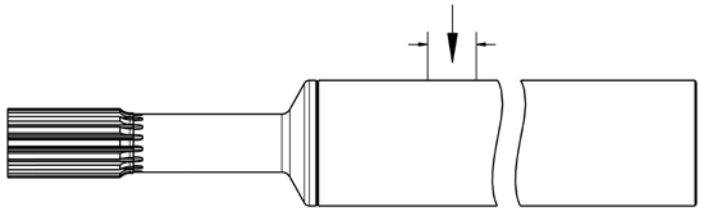
7. Face the tubing to the required length, then chamfer I.D. and O.D.



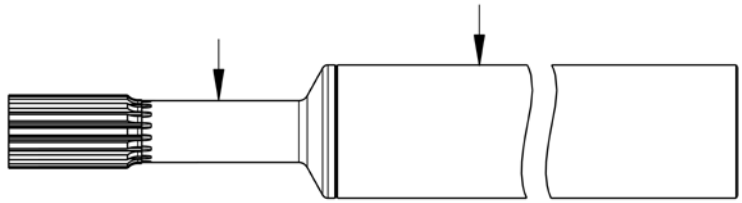
8. Remove the tubing from the lathe then tamp or press the slip stub into either end of the tubing. (NOTE: if tamping method is preferred, a lead plate should be the surface tamped against.)

9. Place back into lathe with approximately 3 3/4 inches of tubing protruding from the jaws and slip stub pointing toward the bed of the lathe.

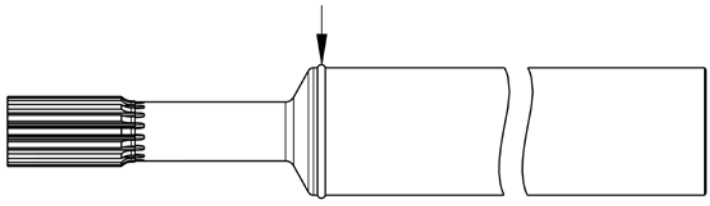
10. Move tail stock into position with center located into the center hole in the slip stub.



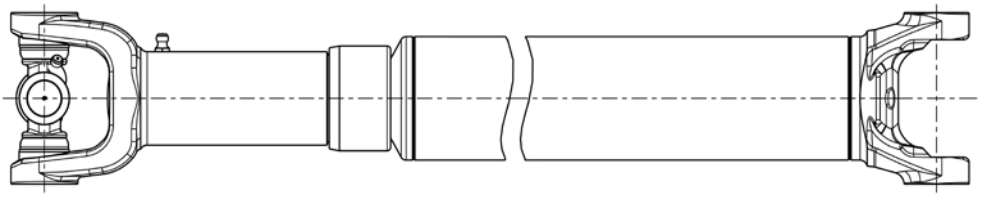
11. Clean the tubing approximately 3 inches from the slip stub around the full diameter of the tube. A 3/4 to 1 inch wide band will be sufficient. Emery cloth can be used.



12. Check the runout on the ground diameter of the slip stub and 3 inches in on the tubing (cleaned area) with a dial indicator.
    Maximum runout 3 inches on tubing = .020
    TIR Maximum runout slip stub = .005 TIR
    Correct, if necessary, to stay within the runout tolerance.
13. Tack weld in place at 90 degree intervals.
    NOTE: Insure that the bed of the lathe is protected from welded spatter whenever welding with component in the lathe.
14. Recheck runout and correct, if necessary. (Refer to step 12)

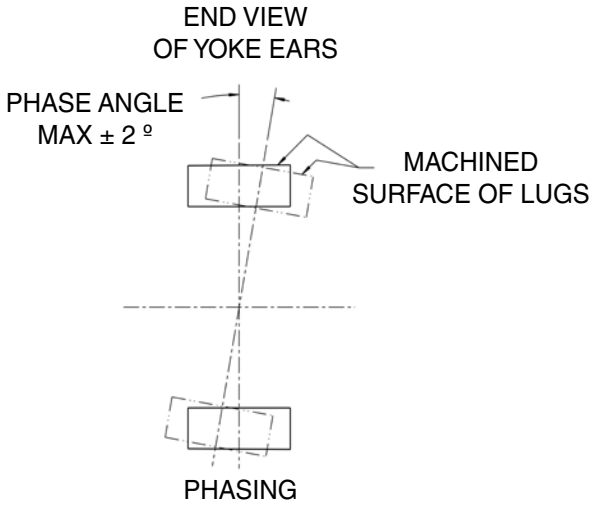


15. Weld single pass starting at the high point determined by the dial indicator.
16. Allow driveshaft to cool then recheck runout.
    NOTE: Do not use any oil, water or an air jet to cool the driveshaft.
17. Remove shaft from lathe and partially tap new tube yoke into tube.
    (a) The components must be properly phased at this time. (NOTE: Alignment arrows unique to Neapco slip yokes will ease the phasing procedure.)
    (b) Some driveshafts are manufactured with special phasing. In this case, the equipment manufacturer's service manual or specifications must be consulted to obtain phasing angles and tolerances.



18. Clamp shaft in a pipe vise with slip yoke temporarily assembled on the slip stub with the ear lugs of the slip yoke and tube yoke pointing upwards. Pipe vise should be on the tube yoke end of the shaft.

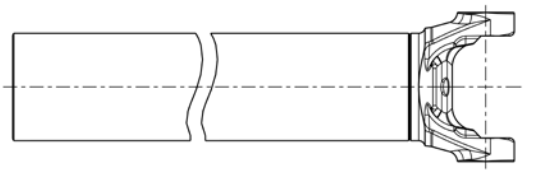
19. Support the opposite end of the shaft with an open steady rest near the slip stub on the tubing.



20. Place a straight edge on the machined surface of the lug on the slip yoke and align by eye with a second straight edge on the lug of the tube yoke. Correct if necessary.

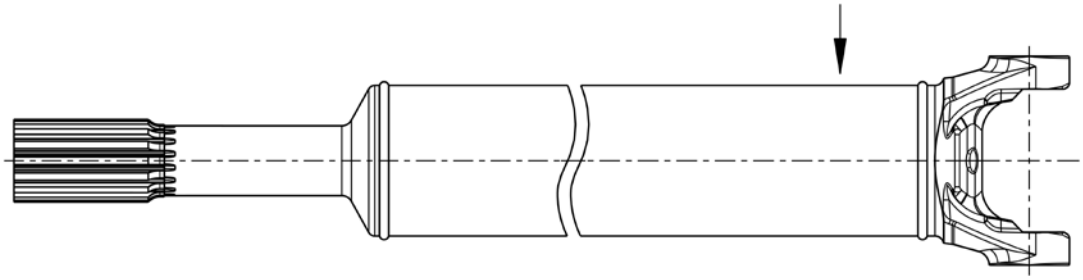
21. Use a protractor level for final phasing. The cross holes of the 1310 Series drive line must be in line within plus or minus 2º maximum.

22. With tube yoke tapped into proper phasing, remove slip yoke and shaft from vise. Press or tamp tube yoke into position.
    NOTE: Use a lead pad if tamping method is used.



23. Place the shaft back into the lathe with the proper fixturing (adapters), tube yoke towards the tail stock.

24. Clean the tubing approximately three inches from the tube yoke around the full diameter of the tube. A 3/4 to 1 inch wide band will be sufficient. Emery cloth can be used.



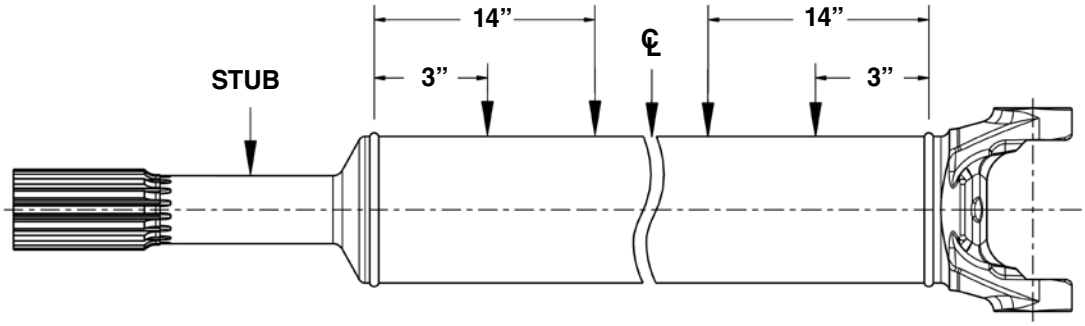
25. Check the runout three inches in on the tubing from the tube yoke end with a dial indicator. Maximum runout three inches on tubing = .020 TIR

26. Tack weld tube yoke in place at 90 degree intervals.
NOTE: Insure the bed of the lathe is protected from weld spatter.

27. Recheck runout and correct, if necessary. (Refer to step 25)

28. Weld single pass starting at the high point determined by the dial indicator.

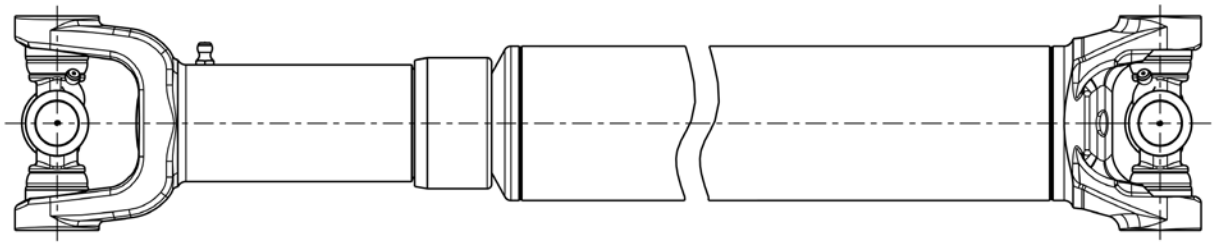
29. Allow driveshaft to cool then recheck runout.
NOTE: Do not use any external cooling methods, i.e. water, oil or air jets.



30. Adapt assembly to centers in the lathe and clean 3/4 to one inch wide bands using emery cloth at 14 inches from each weld on the tube and in the center of the tube. Check the runout at the following areas with a dial indicator:

-MAXIMUM RUNOUT THREE INCHES FROM EACH WELD = .020 TIR
-MAXIMUM RUNOUT 14 INCHES FROM EACH WELD = .010 TIR
-MAXIMUM RUNOUT ON GROUND DIAMETER OF SLIP STUB = ***.005*** TIR
-MAXIMUM RUNOUT AT CENTER OF TUBE (OVER 30”) = .010 TIR
-MAXIMUM RUNOUT AT CENTER OF TUBE (UNDER 30”) = .020 TIR

NOTE: Do not include tubing ovality.
Refer to driveshaft straightness tolerances section for other series

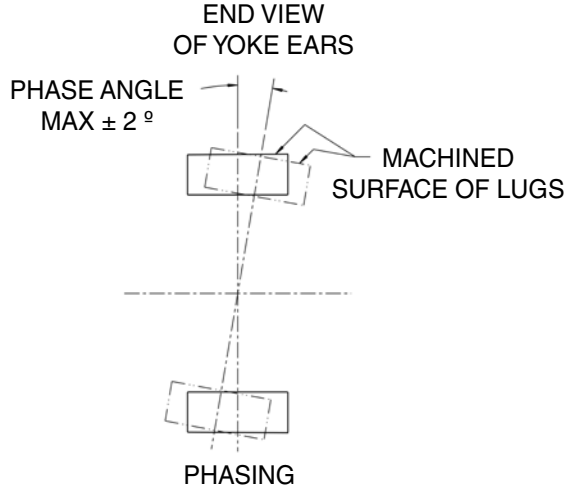


31. Assemble U-Joints and slip yoke into the newly fabricated driveshaft making sure that alignment arrows match up. Balance to specification. Balancing will vary depending on the type of balancer being used. Refer to the manufacturer's procedure for the type of equipment being utilized.
32. Paint the completed driveline and place a decal or sticker on it with your shop logo.

This procedure describes a typical 1310 two-joint assembly fabrication. Methods may vary due to type of equipment utilized. The method may also be followed when repairing a driveline: Simply follow the appropriate steps pertaining to the components in need of replacement. —To fabricate other than 1310 Series refer to the appropriate series data where noted in each procedure.

- ALWAYS REPLACE DAMAGED COMPONENTS
- ADHERE TO ALL SHOP SAFETY PROCEDURES
- ALWAYS STAY WITHIN SPECIFIED TOLERANCES
- ALWAYS BALANCE YOUR DRIVELINE

Phasing Specifications



The cross holes of all two joint driveshafts must be in line within ± 2º Maximum.

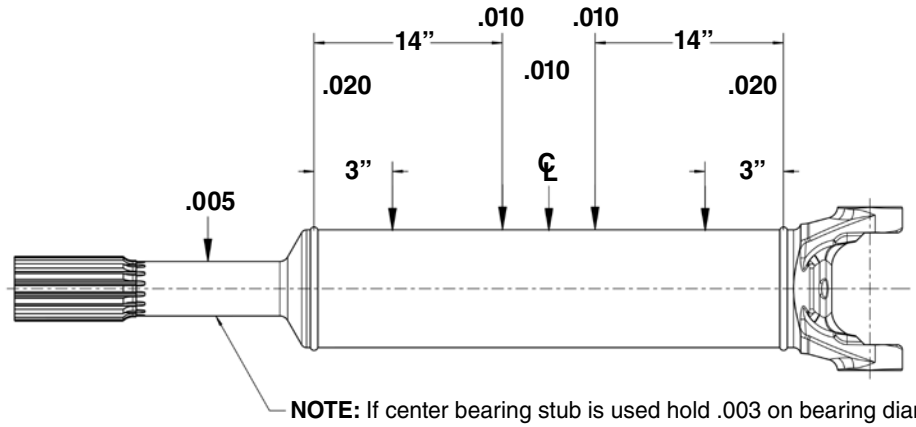
Driveshaft Straightness Tolerances

1000 THRU 1480 — ALSO 7260, 7290, 3R, AND 3C

After welding, runout (not to include tubing ovality) should never exceed the TIR (total indicator reading) as detailed below.

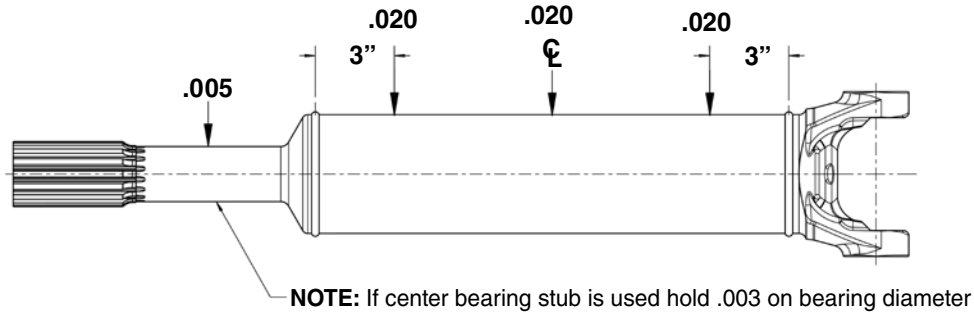
FOR TUBE LENGTH OVER 30”

MAXIMUM RUNOUT 3 INCHES FROM EACH WELD = .020 TIR
MAXIMUM RUNOUT 14 INCHES FROM EACH WELD = .010 TIR
MAXIMUM RUNOUT ON GROUND DIAMETER OF SLIP STUB = .005 TIR
MAXIMUM RUNOUT ON BEARING DIAMETER IF CENTER BEARING STUB IS USED = .003 TIR
MAXIMUM RUNOUT AT CENTER OF TUBE = .010 TIR



FOR TUBE LENGTH UNDER 30”

MAXIMUM RUNOUT 3 INCHES FROM EACH WELD = .020 TIR
MAXIMUM RUNOUT AT CENTER OF TUBE = .020 TIR
MAXIMUM RUNOUT ON GROUND DIAMETER OF SLIP STUB = .005 TIR
MAXIMUM RUNOUT ON BEARING DIAMETER IF CENTER BEARING STUB IS USED = .003 TIR



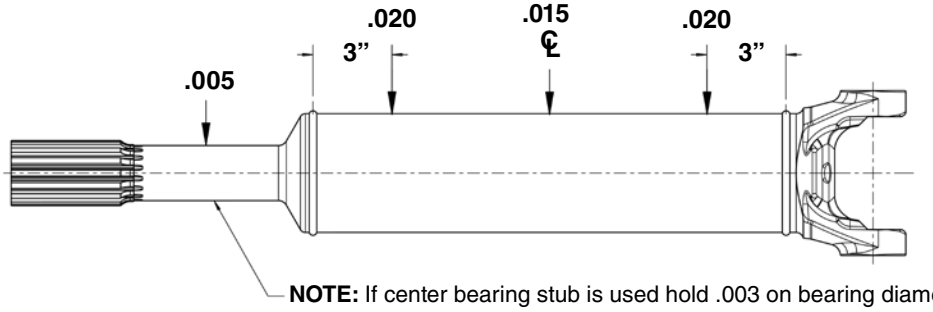
Driveshaft Straightness Tolerances

1550 THRU 1810 — ALSO 5380, AND 4C THRU 10C

After welding, runout (not to include tubing ovality) should never exceed the total indicator reading as detailed below.

FOR ALL TUBE LENGTHS

MAXIMUM RUNOUT 3 INCHES FROM EACH WELD = .010 TIR
MAXIMUM RUNOUT ON GROUND DIAMETER OF SLIP STUB = .005 TIR
MAXIMUM RUNOUT ON BEARING DIAMETER IF CENTER BEARING STUB IS USED = .003 TIR
MAXIMUM RUNOUT AT CENTER OF TUBE = .015 TIR



Lubrication

WHY LUBRICATE?

Proper lubrication of any moving parts in a driveline is essential to keep the driveline in proper working order and to obtain an acceptable service life.

WHAT SHALL I LUBRICATE?

All universal joints, slip yoke and stub shaft assemblies, as well as centering kits in CV heads should be greased regularly.

HOW?

Universal Joints

Secure grease gun on grease fitting and pump in grease until all four bearings are lubricated. To check for this, make sure that all four seals have purged out air and old grease. Grease until fresh grease appears at the base of all four seals. If a seal does not purge properly, move the driveline to free up the end to end clearance of the bearing cup. On bearing plate style U-joints, it may be necessary to loosen the bolts two or three turns to allow grease to flow. If the joint still does not grease properly, disassemble the kit to determine the source of the problem.

Slip Yoke and Stub Shaft Assemblies

Before putting the slip yoke onto the stub shaft, coat both parts uniformly with a layer of grease. After assembly, but before installation into vehicle, fully collapse the driveline and apply grease to the grease fitting until it comes out of the vent hole in the welch plug. Cover the hole and continue greasing until grease appears at the seal.

At relubrication it may be impossible to fully collapse the driveline. Follow the same general greasing procedure but be careful not to overfill. Overfilling may cause the welch plug to pop out during operation.

Centering Kits

A special needle nose grease gun adaptor is needed to grease the flush type fitting on centering kits. Apply grease until fresh grease appears at purge hole or at ball seal.

WHEN SHALL I LUBRICATE?

Frequency of lubrication is determined by the type of service which the driveline is subject to. A list of recommended relube cycles for various service conditions is shown below:

Service Conditions	Re-lube Period	Approximate Miles
City	Every 3 Months	6,500
Highway	Every 1 Month	12,000
Off Highway	Every 3 Months	6,500
Line Haul	Every 1-2 Months	20,000-30,000
Off Highway 4x4	Every 1 Month	2,500

WHAT TYPE OF GREASE SHOULD I USE?

A good quality Lithium Complex soap type EP (extreme pressure) grease, with an NLGI grade2, is recommended.

GENERAL INFORMATION

General Procedures For Assembling Aluminum Driveshafts

Tools Required:

Push-Up Press or Enerpac Hydraulic Press
Centering Tools (Available from Neapco)
"Weld Aid" Cleaning Agent

Assembly procedures for aluminum driveshafts are similar to the procedures Driveline Specialists are familiar with. The most significant difference is the set-up of the welding equipment to allow successful welding of aluminum. Neapco recommends that the Driveline Specialist contact the manufacturer of their welding equipment for set-up specifications and training for welding aluminum.

Preparing the Components:

The tubing and tube weld yokes should be clean and free of burrs. Aluminum is fragile compared to steel, so be careful when handling these components during and after assembly.

1. Chamfer the I.D. of the aluminum tubing to remove any burrs or sharp edges.
2. Clean the inside and outside of the aluminum propeller shaft tubing – a minimum of 2" in from each end using "Weld Aid" cleaning agent or similar cleaning product available from your local welding supply source. Repeat this cleaning procedure for the entire surface of both turned diameters on the aluminum tube weld yoke.
3. Wash both ends of the tubing and tube weld yoke in clean water. Wipe the I.D. and O.D. end of the tubing and the entire tube yoke with a clean, dry towel or cloth until completely dry. Note: Successful welding of aluminum is directly related to cleanliness. Towels or cleaning clothes should be used for aluminum work only and changed frequently. Rinsing water should be placed in a clean container and changed when any signs of contamination are evident. Oil, grease or any foreign material will cause a potential blow hole in the weld.
4. Using a push-up machine or Enerpac and fixtures specifically designed for driveshaft fabrication, assemble the aluminum tube weld yokes into the tubing. Correct phasing (alignment of the yoke ears) is critical to the satisfactory performance of the driveshaft. Adjust phasing so that the yoke ears are in line with each other. (This can be checked with a precision level.) Adjust, if necessary, before proceeding to press.
5. A .090" gap (approximately twice the thickness of the weld wire) should be left between the turned shoulder of the tube weld yoke and the end of the tubing. Spacers should be made for both ends and inserted into the gap between the two components to avoid over pressing. Press until shim stock is snug at both ends, but avoid over pressing. After removing shim stock there should be a minimum of .090" gap.
6. The assembled driveshaft is now ready to be set up for welding. The rotation rate should be set for the tube size you are welding.

Approximate Tube Rotation Rate

Tube Dia.	RPM	Secounds Per Rev.
3.0"	3.18	19
3.5"	2.73	22
4.0"	2.39	25

General Procedures For Assembling Aluminum Driveshafts

The rotation rate is a guideline. Neapco recommends that you contact the supplier of your welding equipment or your local welding supply service for set up of your specific equipment.

A dial indicator should be used to check the runout at each end of the tubing. Using a dead blow hammer tap over the joint between the tube weld yoke and the tubing until the runout is close to 0.000" as possible, but not to exceed .005". This will help to keep the finish welded assembly within .010" TIR at the welds. The middle of the tube should have no more than .015" runout.

Tube Straightening Hint – An arbor press with a 2 ft. piece of wood mounted on the ram with a "V" cut in it to fit over the O.D. of the tube can be used to over press the tubing in the opposite direction of the measured runout. This extra step will not only ease the balancing operation; it is sound driveshaft fabrication practice.

7. The weld gun tip should be aligned with the center of the gap between the tube weld yoke and the tubing. The wire should be perpendicular to the tube/tube yoke surface and at a 12°-15° angle from the centerline of the tubing. The weld should start and end (with ½" overlap) in line with one of the yoke ears. The driveshaft is now ready to weld. Neapco recommends formal training in aluminum welding from your equipment supplier. There is no substitute for practice and hands-on experience. After the shaft has cooled, the welds should be visually inspected. Any visible porosity is a sign that some contamination was present. Visible porosity in an aluminum weld is a sign of a potential failure point. Any sign of an inferior weld other than an occasional small pin hole should be cause for replacement of the product.

Balancing the Aluminum Driveshaft

1. Assemble end connections to the driveshaft (slip yoke and pinion yoke, if available). Balance the assembly to .250 oz./in. maximum at each end of the shaft.
2. Position the appropriate balance weight where required, no more than 2" from the weld bead. Balance weights may be taped in place, using fiber reinforced duct tape, full length around the driveshaft tube.
   The driveshaft should be rechecked for proper specifications (within .250 oz./in. total at each end).
3. After verifying correct balance performance, the balance weights should be attached. While aluminum balance weights may be attached by spot welding, this requires experience as it is easy to burn through, especially when using .083" tubing. Neapco recommends using a two-part chemical Epoxy bond for attaching balance weights. The exact position of the weights should be marked for reinstallation while removing the duct tape. Using Epoxy Quik-Bond from J-B Weld or similar product, coat each surface with a thin layer of the epoxy. The balance weight should carefully be pressed into position. The weight must not be disturbed after installation. The shaft should be set aside until initial curing occurs. The weight should then be taped in place untill the epoxey has ample time to dry before the driveshaft is installed in the vehicle. Note: THere are many fast dry epoxies on the market today. Choose the proper product for your needs. 3M is one supplier that has many.

Auxiliary Power Take-Off Technical Information

POWER-TAKE-OFF (PTO) BASICS

An auxiliary power-take-off shaft transmits power from the source to the driven accessory. The shaft must be capable of transmitting the peak torque and maximum R.P.M. required by the accessory, while withstanding any shock loads. The information in this publication is focused on 1000 and 1310 series auxiliary power-take-off products.

An auxiliary power shaft operates through constantly changing angles between the power source and the driven accessory. Chassis twisting and power train deflections due to torque contribute to these changes in operating angles. This deflection also will cause changes in the length of the auxiliary power shaft. Including a slip member (slip yoke and spline stub shaft) in the driveline system accommodates this.

Joint operating angles are very important considerations in the configuration of an auxiliary power-take-off application. The service life of the universal joint is directly affected by the
operating angles experienced in the completed system. Guidelines for permissible operating angles are identified in the accompanying chart.

UNIVERSAL JOINT OPERATING ANGLES

SHAFT RPM	MAXIMUM NORMAL OPERATING ANGLE	SHAFT RPM	MAXIMUM NORMAL OPERATING ANGLE
500	17°	2500	7°
1000	17°	3000	6°
1500	11°	3500	5°
2000	8°	4000	4°

SPECIFYING SHAFT TYPE

Applications in auxiliary PTO use either solid shafting or tubular driveshaft assemblies.

Neapco tubular auxiliary PTO shaft kits are manufactured using 2” diameter by .083” wall
(2” x .083) tubing. These unwelded assemblies are convenient for fabricating different length driveshaft requirements as needed. Neapco recommends using tubular auxiliary PTO shafts whenever possible. Neapco tubular shafts are designed to reduce vibration as a dynamically balanced assembly. Minimizing vibration increases the service life of the driveshaft, universal joints, bearings in the driving and driven units and helps keep end connections secure.

Solid shafting should only be used in auxiliary power-take-off applications designed for 1,000 R.P.M. or less intermittent service.

INSTALLING A PTO DRIVELINE

When installing a remote-mount PTO, one requiring a propeller shaft (driveline), please observe that there is a slight angle of inclination to the engine, and that you must install the driven shaft of the pump parallel to the PTO output shaft. In addition, the yokes of the PTO driveshaft should be in line, in phase, and in the same plane.

Auxiliary Power Take-Off Technical Information

Some light-duty under body hoist applications use a pump and tank combination, and there are many large tank trucks which have pneumatic blowers. Both require a level horizontal installation, making parallel input and output shafts difficult to configure. The correct remedy for this common driveline problem is to use a two-piece driveshaft. In close-coupled applications a center yoke assembly may be necessary to provide correct phasing and angularity.

To properly measure the driveline angle, use an inclinometer, or bubble protractor to determine TRUE JOINT ANGLE, which is a composite of vertical and horizontal components. This can also be calculated by measuring and using trigonometry. We recommend that you install with at least a two-degree angle, to insure that oscillations will properly rotate the needle bearings in the u-joints.

If a long driveshaft is necessary then critical speed problems must be taken into consideration. The solution is to use more than one driveshaft, installed with center support bearing assemblies, and design the driveshaft lengths to avoid critical and half-critical speeds. Usually the best solution is to install 60% of the driveline closest to the source of power, or the driving end, with the remaining 40% toward the driven end. Pillow blocks, flange bearings or hanger bearings used in two-piece driveshafts must be mounted solidly to the chassis.

WHERE TO INSTALL THE SLIP JOINTS

The purpose of the slip joint (slip yoke and spline stub shaft) is to allow proper flexing of the universal joints as they rotate through the entire circle of operation. If a slip joint is not installed, or if it is corroded from lack of lubricant, then severe stresses are imposed upon the bearings and seals in the PTO and pump. An additional purpose of the slip joint is to allow flexing of the chassis without putting lateral loads on the bearings and seals. Bearing and seal damage in PTOs and pumps, and overheating is nearly always attributable to driveline problems.

Our recommendation is that if you have enough space, ***the slip joint should be installed on the end closest to the PTO.*** If the PTO is inadvertently left in gear, the slip joint may leave the shaft during overspeeding, or operating above critical speed. The shorter shaft is less likely to destroy the entire underside of the vehicle.

CAUSES OF DRIVELINE FAILURES

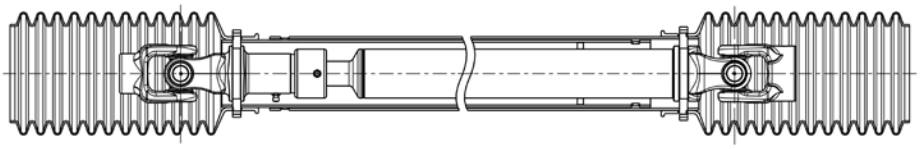
To review u-joint and driveline problems, most failures will be a result of one or more of the following:

- ✔ TOO MUCH TORQUE OR HP REQUIREMENT
- ✔ LACK OF LUBRICANT OR DIRTY LUBRICANT
- ✔ HIGH DEGREE OF ANGULARITY
- ✔ U-JOINTS NOT IN PHASE
- ✔ U-JOINTS NOT PARALLEL
- ✔ DRIVELINE NOT ALLOWED TO SLIP
- ✔ DRIVELINE OUT OF BALANCE

If you must use a driveline, it is our recommendation that you use tubular assemblies, and that you purchase from a certified driveline specialist.

Neapco Auxiliary PTO Driveshaft Shielding System

Neapco®, has developed an Auxiliary PTO Driveshaft shield System that is compatible with many 1000 and 1310 Series power-take-off applications. The system consists of four (4) basic components that combine to form a total driveline enclosure system.



1) A series of Bearing Races (collars) for installation on the driveshaft assembly by tack welding.

2) Flex Bell™ Yoke Enclosures with over 8" of coverage featuring fluted construction for easy length adjustment by cutting, providing custom installations.

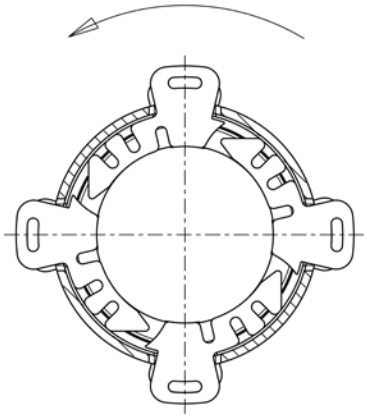
3) Inner (2.75" O.D.) and Outer (3.00" O.D.) Telescoping Plastic Shield Tubes complete with bearing slots (4) and Danger Label. Designed for easy length adjustment by cutting to desired length with bearing slots aligned with bearing races (collars) mounted on the driveshaft. These shields must overlap (telescope) at least 5" or more, if design allows. To accomplish this the shield tube should be cut at least 2 1/2" past the center of the driveshaft with the bearing slots aligned with the bearing race (collars) on the driveshaft.

4) Inner (4) and Outer (4) Shield Bearing Sets. These bearing sets lock the Flex Bell™ Yoke Enclosure to the mating shield tube through the aligned slots and ride in the bearing races on the driveshaft collars.

Assembly is easily accomplished after a short orientation to the system. Disassembly (for service work or lubrication) takes only a few minutes with a blade screwdriver.

Shield Bearings must be installed properly in regards to the rotation of the driveline. This prevents the Shield Bearings from loosening or popping out of the Bearing slots.

DIRECTION OF ROTATION



Troubleshooting Guide

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Fractured cross or trunnion or bearing cup.	A. Excessive running load. B. Shock load. C. Insufficient joint capacity. D. Excessive running angle. E. Material defect.	A, B & C, Replace with higher capacity driveshaft and U-joint. D. Reduce U-joint angle. E. Replace U-joint.
2. Early life U-joint failure	A. Inadequate lubrication. B. Seal failure. C. Excessive running angle and excessive speed. D. Excessive running load.	A Lubricate at minimum recommended intervals with recommended lubricant. B. Replace U-joint. C. Reduce running angle. D. Replace with higher capacity driveshaft and U-joint.
3. Galling of U-joint trunnion end and bearing cup pad.	A. Excessive running angle and excessive speed. B. End to end fit too tight. C. Inadequate lubrication.	A. Reduce U-joint angle. B. Replace U-joint. If replacement kit is tight, check yoke alignment and lockup size: replace yoke. C. Lubricate at minimum recommended intervals with recommended lubricant.
4. Brinnelling of bearing surfaces.	A. Normal fatigue wear. B. Excessive running angle and excessive speed. C. Excessive running load. D. Needle skewing. E. Improper running angle. F. Inadequate lubrication.	A. Replace U-joint. B. Replace U-joint angle. C. Replace with higher capacity driveshaft and U-joint. D. Replace U-joint; check for yoke distortion. E. Maintain minimum recommended running angle (typically 1°). F. Lubricate at minimum recommended intervals with recommended lubricant.
5. Slip assembly seizes up.	A. Inadequate lubrication. B. Seal failure.	A, B. Replace components. Lubricate at minimum recommended intervals with recommended lubricant.
6. Slip assembly galling.	A. Seal failure leading to contamination. B. Excessive running load. C. Inadequate driveline design; length of spline engagement too short, normal running condition with spline at pulley extended position.	A. Replace assembly. B. Replace with higher capacity driveshaft and U-joint. C. Increase length of spline engagement with longer splined stub. Review driveshaft length requirements and rebuild with stub spline centered in yoke at normal running condition.

Troubleshooting Guide

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
7. Stub shaft or tubing failure in torsion.	A. Excessive running load. B. Shock load. C. Inadequate driveline design: tube size too small. D. Defective materials.	A, B, C. Replace with higher capacity driveshaft. D. Replace with new components.
8. Failure at tube weld.	A. Improper weld. B. Excessive running load. C. Balance weight welded too close to tube weld.	A, C. Replace tube. B. Replace with higher capacity driveshaft.
9. Yoke ear failure.	A. Ear, contacted yoke ear of other yoke in assembly while running. B. Defective material.	A. Reduce running angles; use yoke with higher angle rating. B. Replace with new components.
10. Yoke hub failure.	A. Excessive running load. B. Excessive secondary couple loads.	A. Replace with higher capacity driveshaft. B. Reduce running angles.
11. Center support bearing failure.	A. Seal failure. B. Defective part.	A, B. Replace with new components.
12. Center support rubber cushion failure.	A. Misalignment. B. Located too close to heat source.	A. Replace and align. B. Shield from heat or move away from heat source.
13. Driveline vibration.	A. Improper assembly. B. Excessive or unequal running angles. C. Defective U-joint. D. Driveshaft out of straightness and balance specifications. E. Worn slip assembly components. F. Driveline length exceeds maximum for speed range.	A. Make sure all snap rings or bolts are fully seated or torqued properly. B. Reduce and equalize running angles. C, E. Replace with new components. D. Straighten and balance. F. Redesign using larger diameter tubing or two piece driveline.

Glossary Of Common Terms

Back Plate	A retainer plate fixed to the back of a round bearing used to position the bearing in the yoke.
Balancing	A procedure in which the distribution of mass in a rotating body is checked and altered where necessary to ensure that vibration does not occur during operation.
Ball Seat	A full or segmented angular contact bearing located in a socket that supports and centers the ball stud.
Ball Stud	A yoke generally used in CV applications which incorporates a stud onto which a ball is mounted.
Brinnelling	Failure that occurs when the static forces between two curved surfaces in contact result in local yielding of one or both mating members to produce permanent surface discontinuity. Example: Needle roller indents on a u-joint trunnion or trunnions.
Cardan Universal Joint	A non-constant velocity universal joint consisting of two yokes connected by a cross through four bearings and driveable by external sources.
Center Support	A rolling bearing element surrounded by rubber, mounted in a bracket configuration used to mount the support to an outside structure.
Centering Socket Yoke	A yoke assembly that functions as a self-aligning bearing and provides support and a means of centering in double cardan universal joints.
Companion Flange	A flanged member that attaches a driveline to drivetrain components, typically affixed by some bolt-together method.
Critical Speed	The speed at which the rotational speed of a shaft coincides with the natural vibration frequency of the shaft, causing a dynamically unstable condition.
Cross	An intermediate drive member with four equally spaced trunnions in the same plane.
Cross and Bearing Kit	Drive member with four equally spaced trunnions in the same plane and four bearing cups with attaching parts. Also referred to as a universal joint kit or u-joint kit.
Cross Hole	A through hole located in each ear of a yoke used to locate a round bearing.
Double Cardan Universal Joint	A near constant velocity universal joint consisting of two trunnion type Cardan universal joints whose trunnion yokes are connected by a coupling yoke or H-yoke with internal supporting and centering means.
Driveline	An assembly of one or more driveshafts with provisions for axial movement, which transmits torque and/or rotary motion.
Driveshaft	An assembly of one or two universal joints connected to a solid or tubular shaft member.
Driveshaft Length Center to Center	The distance between the outermost universal joint centers on a driveshaft.
Drive Train	Term used for the unit of all components from the Transmission to Rear differential. Also referred to as Power Train.

Glossary Of Common Terms

Ear	One of two projecting parts of a yoke symmetrically located with respect to the rotational axis.
End Yoke	A yoke which attaches a driveshaft to another drive train component such as the transmission.
Flange Yoke	The yoke which attaches the driveshaft assembly to a companion flange.
Flinger	A protective shield used in front of and behind the bearing and rubber on many center supports and end yokes.
Galling	Failure that occurs when two sliding surfaces are subjected to such a combination of loads, sliding velocities, temperatures, environments, and lubricants, that massive surface destruction is caused by welding and tearing, plowing, and gouging. Example: Bearing cup/trunnion end galling on a cross and bearing kit.
H-Yoke	A double yoke which connects the two halves of a double cardan universal joint.
Half Round Cross Hole	A semicircular hole located on the end of each ear of some end yokes and used to locate a round bearing.
Hub	The central part of a yoke used for attachment to another member.
Inside Lock-up	Term referring to either a cross and bearing kit or a yoke that utilizes a snap ring seated in a groove in the bearing cups and located inside the yoke ears to retain the kit in the yoke.
Joint Angle	The angle described by the intersection of rotational axis of the input and output members of a universal joint and measured on the same plane described by these areas.
Liner	A sound and vibrational deadening material added to the inside surfaces of a tube.
Lock-Up	The dimensional distance between the two retaining surfaces in a driveline component used to locate the bearing surfaces.
Midship Stub Shaft.	A short shaft, generally splined, used in applications requiring more than one driveshaft. It mounts through the center of a support bearing and allows an additional driveshaft component to be fixed.
Outside Lock-Up	Term referring to either a cross and bearing kit or a yoke that utilizes a retaining ring in a groove near the outside edge of the yoke ear, rested against the outside face of the bearing cup.
Phase/Phase Angle	The relative positioning of the universal joint yokes on a driveshaft or driveline.
Retaining Ring	A removable ring used as a shoulder to retain and position a round bearing in a hole.
Ring Groove	The surface used for positioning a round bearing with a retaining ring.
Round Bearing	Consists of a round bearing cup with needle rollers designed to ride on a trunnion.
Seal	A flexible member which prevents the escape of lubricant and the entrance of foreign matter.
Slip Movement	A permissible length of axial movement.
Slip Stub Shaft	A short, machined shaft, generally splined, which, when used with a slip yoke allows axial movement.
Slip Yoke	A yoke which allows axial movement.

Glossary Of Common Terms

Snap Ring	Same as retaining ring.
Strap	A narrow plate member used to retain round bearings in certain end yoke designs.
Swaged Tubing	A tube with one or both ends having a smaller diameter then the middle section.
Swing Diameter	The maximum diameter of the circular path described by a rotating universal joint.
Thrust End	The end of a cross trunnion used as a thrust surface.
T.I.R.	Total Indicator Reading on a specific point thru 1 revolution of a shaft.
Torsional Damper	A mechanical device, generally an inertia ring, attached to a drivetrain component by means of a rubber inner ring to minimize driveline vibration in addition to balancing.
Trunnion	One of four projecting journals of a cross.
Tubing	The tubular connecting member of a driveshaft.
Tube Diameter	The outside diameter of a tube.
Tube Yoke	A yoke with a piloting hub for attachment of a tube.
U-Bolt	A clamping bolt with two parallel threaded legs used to retain a round bearing in certain end yoke designs.
Universal Joint	A device which can transmit torque and/or rotary motion from one shaft to another at fixed or varying angles of intersection of the shaft areas.
Wall Thickness	The measurement between the inside and outside diameter of a tube.
Weld Yoke	Same as tube yoke.
Wing Bearing	A member with a key and projecting wings used as the bearing base and positioning the thrust end of a cross trunnion.
Yoke Shaft	A one piece member designed to incorporate a tube yoke, tubing and stub shaft. It is used in close-couple applications and eliminates the need to use tubing.
Zerk	A lubrication fitting, usually threaded into a driveline component that will allow grease to be injected into the component, but does not allow grease to escape.

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CV Head Assemblies

NEAPCO offers the broadest coverage of double-cardan CV head assemblies. Many of these feature our proprietary lubrication system in the critical centering mechanism. This design produces improved grease flow to the important linkage between the CV yokes. The universal joint lock-up relationship to the pilot diameter and ball stud tube diameter reduces driveshaft runout which eliminates vibrations.

Auxiliary/Industrial Driveshafts

NEAPCO's selection of auxiliary/industrial driveshafts is one of the most extensive in the industry. For truck-mounted, shaft-driven hydraulic systems, NEAPCO offers single and two-piece shaft options. Our exclusive Flex-Bell™ adjustable shielding system is designed for the tight spaces found on mobile equipment and provides a safety factor that no competitive program can match. There is a crankshaft-driven shaft system for snowplow and other front-mount machine applications. A selection of standard-length industrial driveshafts that are welded and balanced are also available.

Unwelded Driveshaft Assemblies

Unwelded driveshaft assemblies are designed to allow service of a large cross section of OE and custom applications from a consolidated group of key driveline series sub-assemblies. These kits are constructed with extended tubing sections that can be cut to the required length, welded, and dynamically balanced in a local facility. This will produce an entirely new driveshaft with no used components while greatly reducing the SKU inventory required to support targeted vehicle populations. Coupled with on-the-spot availability, these assemblies are a viable option for volume shaft replacement.

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Specialty Driveshafts

NEAPCO supports a wide variety of custom, conversion, and niche specialty driveshafts. These include traditional cardan universal joint replacement shafts for the early failures experienced with 6-ball constant velocity-style high-speed propshafts. Specialty driveshafts for use in retro fitting vehicles that have been modified from the original OE driveline design or that have modified suspension are a key strength of the NEAPCO program allowing you to provide solutions to previously unserviceable problems.

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