



DEUTZ ACCESSORIES: HAYES RANGE

- Hayes Original Flywheel Couplings
- Hayes 2-Piece HEX-FLX Couplings
- Hayes Pump Mounting Plates
- Side Load Kits

DEUTZ ACCESSORIES: HAYES

DEUTZ Australia has been a distributor for US-based Hayes Manufacturing since 2017.

We stock high quality Hayes bearing supported stub shafts and hydraulic pump drives for diesel and petrol engines. DEUTZ Australia can supply the complete range of Hayes products if requested by customers.

About Hayes Manufacturing

Hayes Manufacturing evolved from a small Michigan garage started by Ray and Betty Hayes in 1966 with Ray's brother Clay into a modern, thriving manufacturing company. Initially a shop-for-hire, it became a respected manufacturer of exceptional engine parts.

In 2019, Hayes Manufacturing was acquired by another family-run company, the CK Power Family of Companies. For more than 90 years, CK Power has been a distributor, manufacturer, and service provider in the off-highway powertrain, equipment, and power solutions markets.

Why Hayes?

Manufactured in the USA to the highest standards, Hayes engine parts were initially chosen to complement the DEUTZ Drive series.

Due to their versatility and reliability, they are also available and sold in Australia and New Zealand for any brand of engine within the Hayes Manufacturing range.

Hayes' patented designs are robust and a cost-effective solution for all your engine needs.

Ideal for Australian and New Zealand conditions

Hayes products are developed for the global environment and promise a long service life across various applications.

Hayes Bearing supported stub shafts, also referred to as sideload kits, are popular in Australia and New Zealand. Hayes Hydraulic pump drives have also become popular options as local customers learn about the brand.

Available through DEUTZ

The DEUTZ service network can match you with the perfect Hayes engine drive solution to suit your application and needs.

Bearing supported stub shafts

DEUTZ stocks the Hayes Original style bearing supported stub shaft that allows you to side-load the flywheel of the engine, while preventing any load back to the crankshaft. If you're out of length but still have some width to work with, you can count on Hayes for your entire side load needs.

Hydraulic pump drives

DEUTZ stocks individual Hayes components for the installation of hydraulic pumps with the option of the Hex Flex and Original style couplings, covering most customer requirements.

Pump mount plates:

We offer pump mount plates for all your pump mounting needs: black, yellow, tan – whatever colour and bolt configuration you desire and require.

Flywheel couplings:

The HEX-FLX flywheel coupling operates below critical speeds with its high torsional stiffness. It minimises spline fretting and has the best shaft clamping abilities in its class. Replacing existing flywheel couplings of similar design with the HEX-FLX may also save you money.

Original flywheel couplings:

The Hayes 'original' flywheel coupling absorbs vibration and shock to provide a steady dampening effect. The one-piece design offers worry-free installation and ensures that your coupling will be installed properly the first time, every time.

To purchase or enquire about purchasing a Hayes product, please contact your local Dealer.

HAYES ORIGINAL FLYWHEEL COUPLINGS.

There are thousands of Hayes Hex-Flex Flywheel Couplings in service throughout the world. They are used in various petrol and diesel engine applications where torsional vibration occurs. The patented pump shaft locking system provides reliability and is class leading clamping.

Hayes couplings take up very little space while transmitting a surprising amount of torque. They are available with a wide variety of spline and bores and keys that come ready to bolt to your flywheel. The splines do not lock onto the shaft in order to allow for any axial movement. This is similar to a drive shaft assembly in automotive applications.

All components have been designed for maximum life (when operated at normal engine speeds, torque, alignment, and appropriately serviced).



CALL DEUTZ AUSTRALIA TO DISCUSS YOUR SPECIFIC APPLICATION REQUIREMENTS

Hayes Original Design Characteristics:

STEEL YELLOW ZINC (TRIVALENT BY 1-1-07) FLYWHEEL PLATE

- Sturdy, steel plate for continuous load support
- Yellow Zinc (Trivalent by 1-1-07) plating to protect against corrosive wear

DRIVE HUB

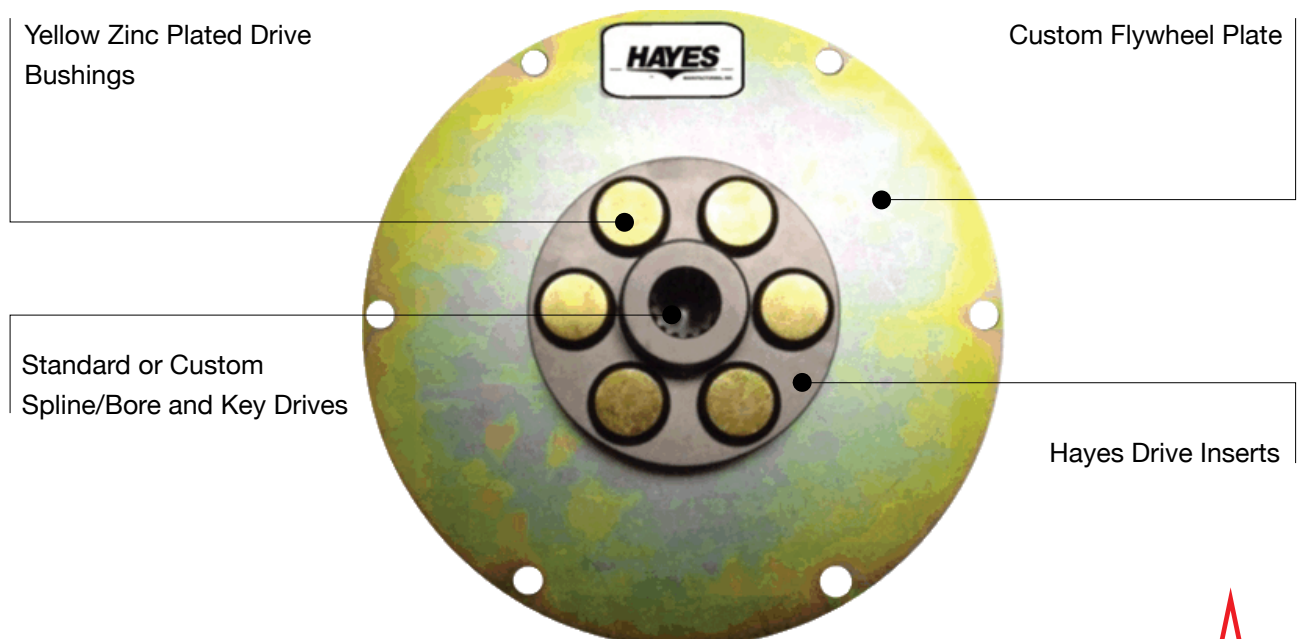
- Precision machined for consistent quality
- Heat-treated splines to prevent premature shaft wear
- Two set screws for clamping bore and key applications
- Large driving surfaces for easy installation and longer drive life
- Splined and bore and key options for your specific applications
- Multiple hub lengths allow for easy installation in any standard SAE or non-standard application

Features and Advantages:

- Absorbs vibration and shock loads to optimise the life of your pump components
- Provides a steady dampening effect under load
- Rugged steel construction
- Eliminates human error with our easy, one-piece design (perfect for a production environment)!
- Operating temperatures: -40 to +220 F
- Various series for standard SAE flywheels and non-standard flywheels (including engine housings)
- Competitively priced and normally in stock
- Spline lubrication including the coupling assembly

Applications:

- Our one-piece coupling is used on off-highway construction equipment
- Aerial lifts, bucket loaders, skid-steer loaders, excavators, sweepers, wheeled loaders, and more
- Consult DEUTZ for applications not listed



HAYES HEX-FLEX FLYWHEEL COUPLINGS.

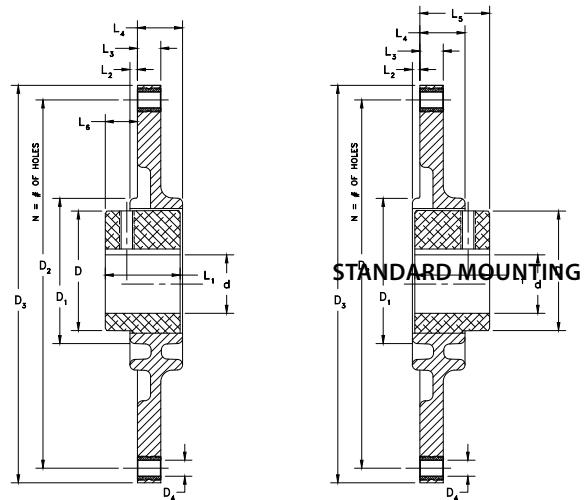
The HEX-FLX flywheel coupling provides operation below critical speeds with its high torsional stiffness. It minimises spline fretting and has the best shaft clamping abilities in its class (Patent No. US 7,645,089 B2, Jan 12, 2010). Replacing existing flywheel couplings of similar design with the HEX-FLX may save costs and downtime for the operators.

FEATURES

- High torsional stiffness for operation below critical speeds
- Operating temperatures: -40 to +220 F
- Light and compact with long service life
- Handles high shock loads
- Easy, two-piece blind mounting
- Customisable, sintered hub lengths
- Various series for standard SAE flywheels
- Secure locking system to eliminate fretting

FLANGE DIMENSIONS IN INCHES (SAE J 620)					
PART NUMBER	SAE SIZE	D3	D2	N	D4
81504116	6-1/2	8.5	7.875	6	0.343
81504118	7-1/2	9.5	8.75	8	0.343
81504119	8	10.375	9.625	6	0.416
81504117	10	12.375	11.625	8	0.416
81504121	11-1/2	13.875	13.125	8	0.416
81504120	14	18.375	17.25	8	0.531

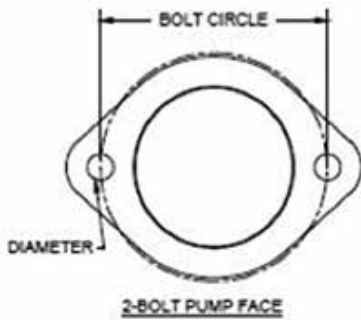
SHORT MOUNTING



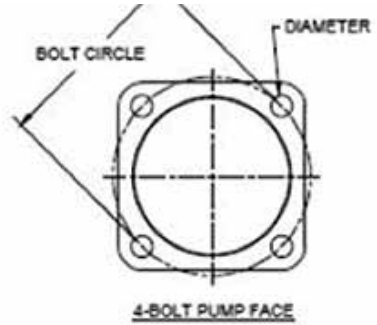
HEX-FLEX TECHNICAL COUPLING DATA.

TECHNICAL DATA FOR HEX-FLX COUPLINGS - TORQUES / WEIGHTS / MASS MOMENTS OF INERTIA												
PART	SIZE	TORQUE T (FT.LBS)		GENERAL HP RATING	WEIGHT / MASS MOMENT OF INERTIA J		HEX-FLX FLANGES ACCORDING TO SAE					
		T NOMINAL	T MAX		UNITS	STD BORE	6-1/2	7-1/2	8	10	11-1/2	14
81504175 81504176 81504177 -	HB1	225	365	20-75	lbs	1.53	.88	-	-	-	-	-
lb in ²					1.79	7.89	-	-	-	-	-	
81504122 81504174	HB2	225	365		lbs	1.76	.88	-	-	-	-	-
lb in ²					2.03	7.89	-	-	-	-	-	
- -	HB3	225	365		lbs	2.03	.88	-	-	-	-	-
lb in ²					2.3	7.89	-	-	-	-	-	
- -	HB4	225	365		lbs	2.13	.88	-	-	-	-	-
lb in ²					2.50	7.89	-	-	-	-	-	
81504178 81504179 81504180 81504181 81504182 -	HC1	585	1125	75-200	lbs	2.41	-	1.12	1.17	1.63	-	-
lb in ²					3.83	-	13.4	15.67	31.01	-	-	
- -	HC2	585	1125		lbs	2.82	-	1.12	1.17	1.63	-	-
lb in ²					4.41	-	13.4	15.67	31.01	-	-	
81504188 81504189 81504190 -	HC3	585	1125		lbs	3.05	-	1.12	1.17	1.63	-	-
lb in ²					4.72	-	13.4	15.67	31.01	-	-	
81504186 81504187	HC4	585	1125		lbs	3.61	-	1.12	1.17	1.63	-	-
lb in ²					5.5	-	13.4	15.67	31.01	-	-	
- -	HC5	585	1125		lbs	3.98	-	1.12	1.17	1.63	-	-
lb in ²					6.01	-	13.4	15.67	31.01	-	-	
- -	HC6	585	1125		lbs	4.23	-	1.12	1.17	1.63	-	-
lb in ²					6.37	-	13.4	15.67	31.01	-	-	
81504191 81504192 81504193 -	HDT1	1300	3300	200-600	lbs	7.88	-	-	-	-	-	2.93
lb in ²					30.25	-	-	-	-	-	74.93	
81504194 81504195 81504196 -	HDT2	1300	3300		lbs	9.27	-	-	-	-	-	2.93
lb in ²					35.31	-	-	-	-	74.93		
- -	HDT3	1300	3300		lbs	10.05	-	-	-	-	-	2.93
lb in ²					40.09	-	-	-	-	74.93		

HAYES COUPLING SPECIFICATIONS SHEET.



BOLT CIRCLE _____
DIAMETER _____



4-BOLT PUMP FACE

FLYWHEEL DATA

PILOT DIA _____
BOLT CIRCLE _____
OF HOLES _____

FLYWHEEL HOUSING DATA

PILOT DIA _____
BOLT CIRCLE _____
O.D. _____
OF HOLES _____

FLYWHEEL TO HOUSING

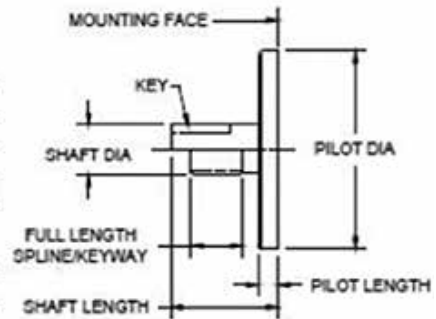
BACKSET _____

STANDARD DATA

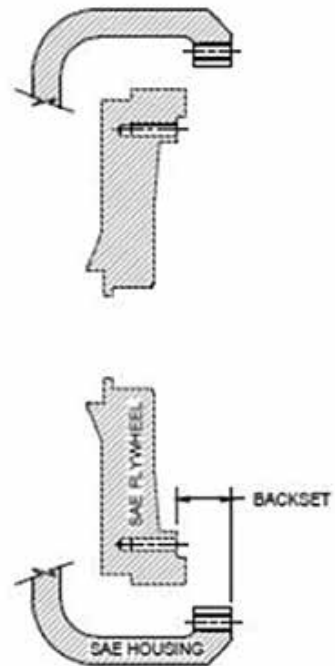
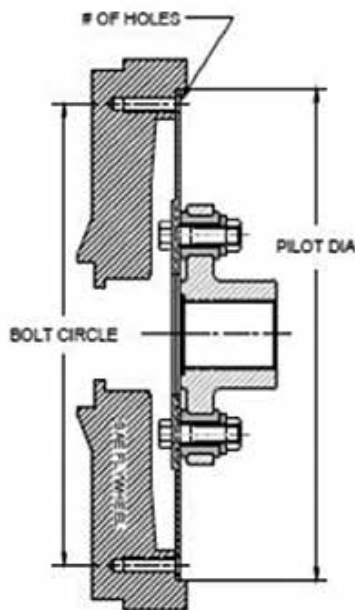
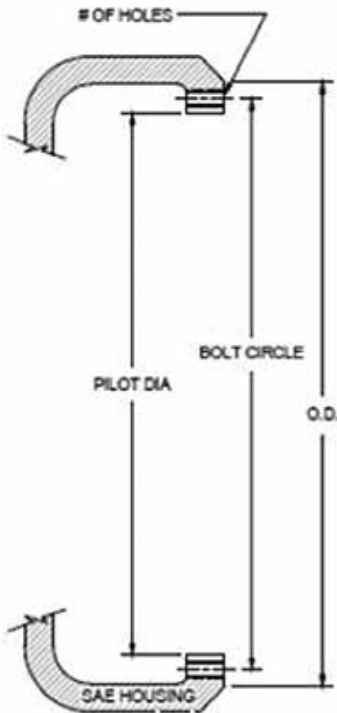
PILOT DIA _____
SHAFT DIA _____
SHAFT LENGTH _____
FULL KEY/SPLINE LENGTH _____
PILOT LENGTH _____

SPLINE DATA

OF TEETH _____
D.P. _____
P.A. _____



PUMP SHAFT INFORMATION



HAYES HYDRAULIC PUMP MOUNTING PLATE.

DEUTZ Australia offers pump mounting plates for your entire pump mounting needs. They come in black, yellow or plain steel to meet your requirements.

Hayes Pump Mounting Plates are designed to carry your toughest loads. Our customers hang pumps, motors, blowers, gearboxes, and many other driven components from our pump mounting plates. They are machined to give you maximum thread engagement and can be customised for your specific application.

FEATURES

- Sturdy, steel plate for continuous load support
- Multiple thickness options
- Black zinc plating standard
- Yellow zinc plating available
- Custom painted available

Features and Advantages:

- Machined to fit SAE or Non-SAE engine housing
- Available in 2 or 4 bolt and both 2 and 4 bolt in one pump mount plate
- Many pump mount options available:

SAE AA	SAE A
SAE B	SAE C
SAE D	SAE E
SAE F	
- Multiple plate thicknesses for your light or heavy duty applications
 - 5/8" Thick
 - 3/4" Thick
 - 1" Thick

Applications:

- Aerial lifts, bucket loaders, skid-steer loaders, excavators, sweepers, wheeled loaders, and more
- Consult DEUTZ for applications not listed



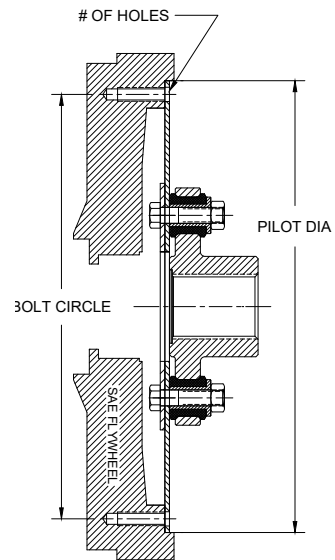
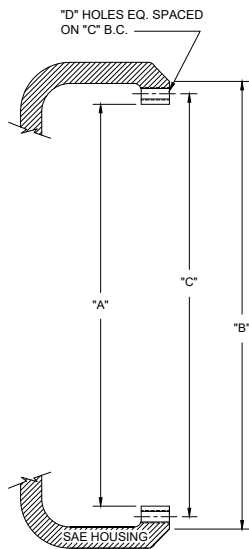
The engine company.



HAYES PUMP MOUNT PLATE SELECTION.

STANDARD SAE FLYWHEEL COUPLING AND PUMP MOUNT INFORMATION

HAYES SAE PUMP MOUNTING PLATE DIMENSIONS						
HOUSING SIZE	'A' PILOT	'B' O.D.	'C' B.C.	PLATE THICKNESS	'D' MOUNTING PLATE HOLES	
					# OF HOLES	SIZE
1	20.125	21.750	20.875	1" OR 5/8"	12	31/64
2	17.625	19.250	18.375	1" OR 5/8"	12	27/64
3	16.125	17.750	16.875	5/8"	12	27/64
4	14.250	15.880	15.000	5/8"	12	27/64
5	12.375	14.000	13.130	5/8"	8	27/64
6	10.500	12.120	11.250	5/8"	8	27/64



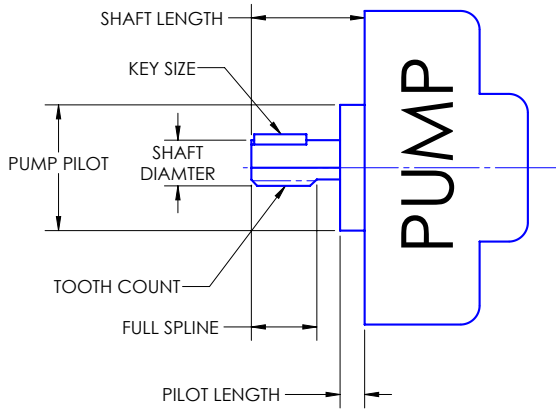
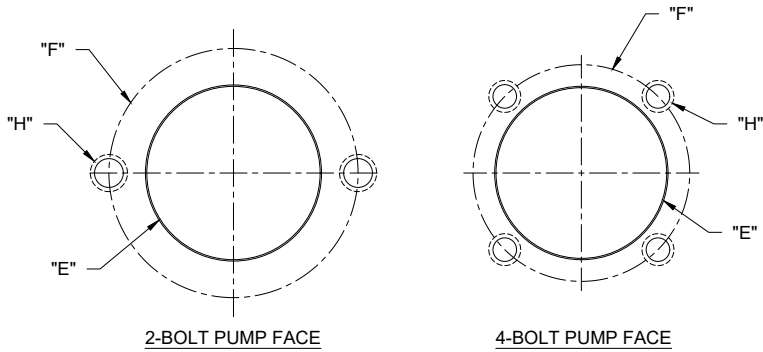
HAYES SAE FLYWHEEL PLATE DIMENSIONS				
SAE FLYWHEEL SIZE J620	'A' O.D.	'B' B.C.	# OF HOLES	'C' HOLE SIZE
6-1/2	8.499	7.875	6	0.343
7-1/2	9.499	8.750	8	0.343
8	10.374	9.625	6	0.406
10	12.374	11.625	8	0.406
11-1/2	13.874	13.125	8	0.406
14	18.375	17.250	8	0.531
16	20.375	19.250	8	0.531

HAYES PUMP MOUNT PLATE SELECTION.

PUMP MOUNTING PLATE OPTIONS FOR YOUR APPLICATION

PLATE INFORMATION		PUMP INFORMATION		PLATE INFORMATION		PUMP INFORMATION	
SAE HOUSING	THICKNESS	SAE PUMP PILOT	BOLT PATTERN	SAE HOUSING	THICKNESS	SAE PUMP PILOT	BOLT PATTERN
1	1"	B	2-BOLT	3	5/8"	A	2-BOLT
1	1"	C	2-BOLT	3	5/8"	B	2-BOLT
1	1"	D	2-BOLT	3	5/8"	C	2-BOLT
1	1"	E	2-BOLT	3	5/8"	D	2-BOLT
1	1"	F	2-BOLT	3	5/8"	B	4-BOLT
1	1"	C	4-BOLT	3	5/8"	C	4-BOLT
1	1"	D	4-BOLT	3	5/8"	D	4-BOLT
1	1"	E	4-BOLT	3	5/8"	E	4-BOLT
1	1"	F	4-BOLT	3	5/8"	F	4-BOLT
2	1"	B	2-BOLT	4	5/8"	A	2-BOLT
2	1"	C	2-BOLT	4	5/8"	B	2-BOLT
2	1"	D	2-BOLT	4	5/8"	C	2-BOLT
2	1"	E	2-BOLT	4	5/8"	D	2-BOLT
2	1"	F	2-BOLT	4	5/8"	E	2-BOLT
2	1"	C	4-BOLT	4	5/8"	B	4-BOLT
2	1"	D	4-BOLT	4	5/8"	C	4-BOLT
2	1"	E	4-BOLT	4	5/8"	D	4-BOLT
2	1"	F	4-BOLT	5	5/8"	A	2-BOLT
2	5/8"	A	2-BOLT	5	5/8"	B	2-BOLT
2	5/8"	B	2-BOLT	5	5/8"	C	2-BOLT
2	5/8"	C	2-BOLT	5	5/8"	B	4-BOLT
2	5/8"	D	2-BOLT	5	5/8"	C	4-BOLT
2	5/8"	E	2-BOLT	6	5/8"	A	2-BOLT
2	5/8"	F	2-BOLT	6	5/8"	B	2-BOLT
2	5/8"	B	4-BOLT	6	5/8"	B	4-BOLT
2	5/8"	C	4-BOLT				
2	5/8"	D	4-BOLT				
2	5/8"	E	4-BOLT				
2	5/8"	F	4-BOLT				

STANDARD SAE PUMP INFORMATION.



PUMP MOUNT FLANGE & SHAFT SIZE SAE J744C	2-BOLT PUMP				4-BOLT PUMP				SHAFT DIMENSIONS			
	'E' BORE DIA	'F' B.C.	'G' C'BORE DIA	'H' TAPPED HOLES	'E' BORE DIA	'F' B.C.	'G' C'BORE DIA	'H' TAPPED HOLES	SPLINE	SPLINE SHAFT LENGTH	BORE & KEY	BORE & KEY SHAFT LENGTH
A-A	2.000	3.250	7.000	5/16-18					9T 20/40	1.060	1/2"	1.060
A	3.250	4.187	7.000	3/8-16					9T 16/32	1.248	5/8"	1.248
									11T 16/32	1.490	3/4"	1.248
B	4.000	5.750	10.500	1/2-13	4.000	5.000	10.500	1/2-13	13T 16/32	1.622	7/8"	1.622
B-B	4.000	5.750	10.500	1/2-13	4.000	5.000	10.500	1/2-13	15T 16/32	1.810	1"	1.810
C	5.000	7.125	12.500	5/8-11	5.000	6.375	12.500	1/2-13	14T 12/24	2.185	1-1/4"	2.185
C-C	5.000	7.125	12.500	5/8-11	5.000	6.375	12.500	1/2-13	17T 12/24	2.434	1-1/2"	2.435
D	6.000	9.000	14.000	3/4-10	6.000	9.000	14.000	3/4-10	13T 8/16	2.935	1-3/4"	2.935
E	6.500	12.500	16.000	1"-8	6.500	12.500	16.000	3/4-10	13T 8/16	2.935	1-3/4"	2.935
F	7.000	13.781	18.000	1"-8	7.00	13.781	18.000	1"-8	13T 8/16	3.435	NONE	NONE

SIDE LOAD KITS.

The Hayes Bearing Supported Stub Shaft assembly is specifically designed for side load applications

Have a pulley or an overhung clutch you need to drive? Look no further. Our Bearing Supported Stub Shafts allow you to side-load the back of an engine, while not allowing any load back to the crankshaft. Are you out of length but still have some width to work with? Start counting on Hayes for your entire side load needs. Ref: Patent# 7,086,432

The Hayes Stub Shaft design employs a single and double roll radial ball bearing designed for light and heavy-duty work, not to exceed side loads listed in tables 1 through 4.

The bearings are self-contained in our specially designed housing that will keep the assembly free of contamination. Hayes Bearing Supported Stub Shafts come pre-mounted to your specific flywheel housing plate or custom Hayes housing.

Along with the mounted bearing support, you will also receive a Hayes Flywheel Coupling that will be sized for your application to drive the bearing support sub-assembly.

Features and Advantages:

- Rugged double bearing design
- Ease of installation
- Re-greasable bearings for long life
- Oil filled option for 24 hour continuous usage applications
- Various shaft sizes from 1-7/16" to 2-1/2"
- Approved for use by engine manufacturers
- Cost effective solution for side load adapters

We emphasise that the data contained herein should be used as a guide only. The tabulation is based on laboratory tests but does not take into account all variables that can be encountered in actual use.

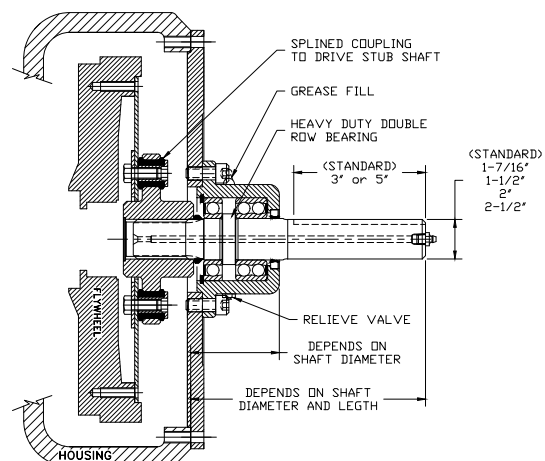
Therefore, it is advisable to test the material under actual service conditions before specification. If this is not practical, tests should be devised that simulate your service conditions as closely as possible.

SPECIFICATIONS

- Output depends on your application for shaft size and length.

RATINGS

- Max input torque: 650 lb-ft
- Max speed: 3000 rpm
- Max power: 900 hp or 670kw
- Bearing life: up to 3 years continuous running



SIDE LOAD RATINGS TABLES.

TABLE 1									
SIDE LOAD RATINGS FOR 1-7/16" BEARING SUPPORTED STUB SHAFT (TAPPED FOR CENTRIFUGAL CLUTCH)									
	SIDE LOAD 1000 LBS	SIDE LOAD 1000 LBS	SIDE LOAD 1000 LBS	SIDE LOAD 1000 LBS	SIDE LOAD 1000 LBS	SIDE LOAD 950 LBS	SIDE LOAD 910 LBS	SIDE LOAD 870 LBS	SIDE LOAD 810 LBS
	500 RPM	800 RPM	1100 RPM	1400 RPM	1700 RPM	2000 RPM	2300 RPM	2600 RPM	3000 RPM
BASIC L-10 LIFE HOURS	91468	57168	41577	32667	26902	26671	26387	26712	28686

TABLE 2									
SIDE LOAD RATINGS FOR 1-1/2" BEARING SUPPORTED STUB SHAFT									
	SIDE LOAD 1500 LBS	SIDE LOAD 1240 LBS	SIDE LOAD 1160 LBS	SIDE LOAD 1075 LBS	SIDE LOAD 1000 LBS	SIDE LOAD 950 LBS	SIDE LOAD 910 LBS	SIDE LOAD 870 LBS	SIDE LOAD 810 LBS
	500 RPM	800 RPM	1100 RPM	1400 RPM	1700 RPM	2000 RPM	2300 RPM	2600 RPM	3000 RPM
BASIC L-10 LIFE HOURS	27102	29984	26636	26296	26902	26671	26387	26712	28686

TABLE 3									
SIDE LOAD RATINGS FOR 2" BEARING SUPPORTED STUB SHAFT									
	SIDE LOAD 2600 LBS	SIDE LOAD 2300 LBS	SIDE LOAD 2175 LBS	SIDE LOAD 2025 LBS	SIDE LOAD 1900 LBS	SIDE LOAD 1810 LBS	SIDE LOAD 1740 LBS	SIDE LOAD 1740 LBS	SIDE LOAD 1680 LBS
	500 RPM	800 RPM	1100 RPM	1400 RPM	1700 RPM	2000 RPM	2300 RPM	2600 RPM	3000 RPM
BASIC L-10 LIFE HOURS	31994	30091	26365	26287	26770	26750	26529	26380	28052

TABLE 4									
SIDE LOAD RATINGS FOR 2-1/2" BEARING SUPPORTED STUB SHAFT									
	SIDE LOAD 4850 LBS	SIDE LOAD 4250 LBS	SIDE LOAD 3975 LBS	SIDE LOAD 3650 LBS	SIDE LOAD 3450 LBS	SIDE LOAD 3250 LBS	SIDE LOAD 3100 LBS	SIDE LOAD 2980 LBS	SIDE LOAD 2780 LBS
	500 RPM	800 RPM	1100 RPM	1400 RPM	1700 RPM	2000 RPM	2300 RPM	2600 RPM	3000 RPM
BASIC L-10 LIFE HOURS	32314	30014	26679	27075	26404	26847	26901	26789	28597

IMPORTANT: If you have an application that is not covered by this data please call DEUTZ to determine what Hayes option we can offer you.

NOTE: These loads are calculated for three years of continuous running. If you are not running the unit 24/7 you may be able to have a higher load at higher RPMs.

ABOUT DEUTZ.

DEUTZ AG is one of the world's major independent manufacturers of diesel engines. Located in Cologne, Germany, DEUTZ has a presence in over 130 countries.

DEUTZ AUSTRALIA has been headquartered in Melbourne Victoria since 1952 and is supported by a large dealer network throughout Australia, New Zealand and the Pacific Islands, as well as an exclusive partner network.

For more than 150 years, the name DEUTZ has been synonymous with cutting-edge technology and high quality products.



We care. We support. We deliver.

DEUTZ SERVICE.

We focus on you, the customer. We are a reliable partner and competent problem-solver for all your engine requirements – fast, efficient and unbureaucratic. Understanding your individual challenges, the extensive knowledge of our service experts – as well as DEUTZ original spare parts – make it possible for us to always offer you the best solutions.

DEUTZ service is always close by – all over the world. This gives you the security of a comprehensive range of service products and services to ensure maximum availability and service life for your DEUTZ engines and appliances.

We care.

Comprehensive support for all DEUTZ products during their entire service life.

We support.

800 DEUTZ service partners in 130 countries are on hand day and night to help our customers.

We deliver.

Worldwide logistics centres in Germany, the USA, Australia and Asia guarantee the worldwide supply of more than 40,000 original spare parts.



For more information please contact your local DEUTZ Dealer.