R & D MARINE LTD.

Damper Drive Plates

R & D Marine has developed a wide range of competitively priced Damper Drive Plates to fit most engine/gearbox combinations.

The R & D Damper Drive Plates reduce gear noise and allow the engine to run at lower speeds.

Linear Stiffness elements for general applications and High-Deflection elements to stop gear noise and spline wear at slow speeds.

All dampers are designed to be Fail-Safe and maintain the drive if the flexible element fails.

The flexible elements are made from a Polyester Elastomer which has good heat qualities and is not affected by salt water, diesel and lubrication oils.

Non-standard items are available for special installations, maximum back plate diameter of 533mm (21.0").

Installation is made quick and easy as the R & D Damper Drive Plate requires no machining and is ready to bolt to the flywheel.

Products are available ex-stock and worldwide through our distribution network.

- **For engines up to 800 HP**
- **Torque range 60-1400 lb ft**
- **Reduces gear noise**
- **Allows engine to run at lower speeds**
- **Fail safe design**
- **Machined ready to install**
- **Elements suitable for every application**
- **Element has good heat qualities**
- **Special back plates up to 533mm (21.0") diameter**
- **Element is impervious to salt water, diesel and lubrication oils**
- **Wide range of stock**
- **Competitively priced**
- **No springs to rust or fret**
- **Worldwide availability**

R & D Marine Damper Drive Plates

Element Selection

Consider the following criteria when making a decision on the element design.

High Deflection (H/D) Softer than our other designs with a maximum deflection up to 30 degrees, slightly larger diameter element than other designs and can only be fitted to rotate in the standard direction of rotation (anti-clockwise looking at the flywheel). With the element facing the gearbox. Suitable for work boats with slow speed applications and pleasure boats.

Hammer Head More torsionally flexible than the loop type, usually has smaller diameter element than our other designs but still retains the ability to be mounted either way round on the flywheel and rotate in either direction. Three stage stiffness with up to 9 degrees of deflection.

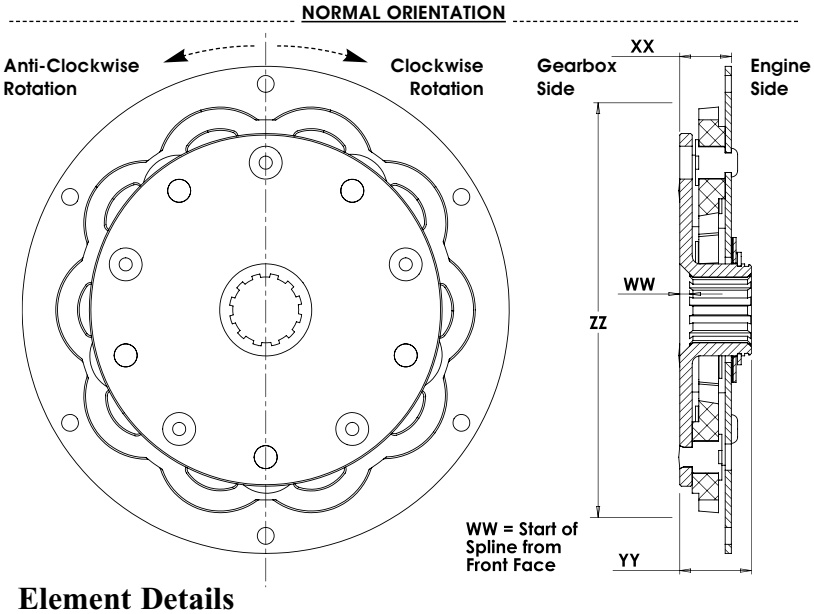
Loop type General purpose robust element which can be mounted either way round on the flywheel and can rotate in either direction. Linear stiffness up to 3 degrees of deflection.

Details required for Damper Selection

1. **Manufacturer of Engine, Engine Horse Power, Engine Speed, Number of cylinders**
2. **Manufacturer of Gearbox, Model Number and Input Spline Details.**
3. **Back plate diameter, Number of holes, Size of holes, Pitch circle diameter of holes, Are they equally spaced? Does the plate fit on the face of the flywheel or locate in a register?**
4. **Will the element of the Drive Plate fit on the outside of the flywheel or be reversed and fit inside a flywheel recess?**
5. **Type of application. Pleasure or Work Boat? Does it spend long periods at low engine speeds**

• If an existing installation with a failed part •

6. **Type and Part Number of Damper that has failed**
7. **What has failed. Spline or Element/Springs?**



Gearbox Spline Details

Gearbox	Spline	Spline Dia mm	Spline Dia inch
Borg Warner			
71, 72, 73, 5000	26T 20/40 DP	35.4	1.394
1000, 1500	22T PA 30	18.5	0.729
500	10T B10 x 23 x 29 DIN 5464	29.0	1.142
7000	SAE 1.500 x 10T	38.1	1.50
Newage PRM			
Delta	17T 24/48 DP	19.7	0.776
80, 120, 150	10T B10 x 23 x 29 DIN 5464	29.0	1.142
100, 101, 140, 160, 260	SAE 1.000 x 10T	25.4	1.000
175, 250, 265, 310	SAE 1.125 x 10T	28.6	1.125
301. 302, 401, 402, 500, 750	17T 16/32 DP	28.84	1.135
In-Line 301, 302, 401 402, 500, 750	26T 20/40 DP	35.4	1.394
601, 1000	18T 12/24 DP	40.5	1.595
1200, 1500	20T 12/24 DP	44.8	1.761
Paragon			
P Series	26T 20/40 DP	35.4	1.394
Parsons			
	SAE 1.500 x 10T	38.1	1.50
Self Change Gear			
MRF 350HD	32T 16/32 DP	52.3	2.060
MRF 350	SAE 1.625 x 10T	41.3	1.625
Technodrive			
TMC 30, 40, 50, 60	10T B10 x 23 x 29 DIN 5464	29.0	1.142
TM 93, 170, 260, 345 485, 545, 880	26T 20/40 DP	35.4	1.394
TMP			
1200, 1500	26T 20/40 DP	35.4	1.394
Twin Disc			
502, 501	26T 20/40 DP	35.4	1.394
Volvo			
140 Leg Old 270-280 Leg	SAE 1.000 x 10T	25.4	1.000
MS3, 4, 5, HS1 Sail Drive 110 110S, New 270-280 Leg	26T 20/40 DP	35.4	1.394
120 Leg, MS 120SB, 120SC	20T 30PA 24/48 DP	22.6	0.89
Yanmar			
Kanzaki, SD20 Sail Drive	20T 30PA 24/48 DP	22.6	0.89
ZF - Hurth			
HBW 35, 40, 50, 100, 125, 150	10T B10 x 23 x 29 DIN 5464	29.0	1.142
HSW 125 HBW 250, 360	26T 20/40 DP	35.4	1.394
HSW 450, 630, 800 IRM 220A	26T 20/40 DP	35.4	1.394

Element Details

Torque Nm	Torque lb ft	Design	Code	Element Fixing	Rotation (When Facing Fly Wheel)
HIGH DEFLECTION					
135	100	H/D	AM	3 x 0.375 (4.00)	Anti-Clockwise
270	200	H/D	AN	4 x 0.375 (6.00)	Anti-Clockwise
405	300	H/D	AL	4 x 0.375 (6.50)	Anti-Clockwise
670	500	H/D	AD	4 x 0.500 (8.00)	Anti-Clockwise
940	700	H/D	AE	4 x 0.500 (10.25)	Anti-Clockwise
HAMMER HEAD					
135	100	Hammer	W	3 x 0.375 (4.00)	Either
215	160	Hammer	D	5 x 0.375 (5.59)	Either
340	250	Hammer	Y	5 x 0.500 (5.59)	Either
405	300	Hammer	AJ	3 x 0.500 (4.50)	Either
420	310	Hammer	L	5 x 0.375 (5.59)	Either
475	350	Hammer	U	5 x 0.500 (5.59)	Either
745	550	Hammer	R	5 x 0.500 (5.59)	Either
LOOP TYPE					
80	60	Loop	A	3 x 0.375 (4.00)	Either
135	100	Loop	B	3 x 0.375 (4.00)	Either
245	180	Loop	E	5 x 0.375 (5.59)	Either
270	200	Loop	F	3 x 0.500 (4.50)	Either
340	250	Loop	G	5 x 0.375 (5.59)	Either
360	270	Loop	H	4 x 0.500 (4.50)	Either
405	300	Loop	J	3 x 0.500 (4.50)	Either
445	330	Loop	K	5 x 0.500 (5.59)	Either
540	400	Loop	M	5 x 0.375 (5.59)	Either
610	450	Loop	N	4 x 0.500 (4.50)	Either
610	450	Loop	V	5 x 0.500 (5.59)	Either
745	550	Loop	P	5 x 0.500 (5.59)	Either
1015	750	Loop	S	5 x 0.500 (5.59)	Either
1630	1200	Loop	Z	6 x 0.625 (10.2)	Anti-Clockwise
1630	1200	Loop	AF	6 x 0.625 (10.2)	Clockwise
1901	1400	Loop	AH	6 x 0.625 (10.2)	Anti-Clockwise

Damper Selection Procedure

Example 1) Ford 150 HP at 2500 RPM 6 Cylinder
2) Borg Warner Velvet Drive 72C Spline 26 teeth 20/40 DP 1.394 diameter
3) Back Plate diameter 14.250, fixing holes 6 x 0.375 diameter on13.500 pcd spaced in 3 groupe of 2. No register
4) Element fits on outside of flywheel
5) Work Boat with a lot of slow speed work.

The R & D Damper comprises 3 main components, Spline plate, Element and Back plate, these 3 components are given a code which make up the finished part number.. The following procedure will lead you through the selection process.

1. **Select the correct power and style of element for the application .**
   Use the manufacturers maximum torque figure for the engine or calculate from the known data of maximum horsepower rating at what rpm. Using the example installation above we get 315 lb ft or 427 Nm
   To calculate output Torque of engine

Horse Power of Engine x 5250 / Engine Speed = Torque lbft — **150 x 5250 / 2500 = 315 lb ft**

Horse Power of Engine x 7123 / Engine Speed = Torque Nm — **150 x 7123 / 2500 = 427 Nm**

From the Element selection chart we see the most suitable element has a code of AD and a fixing of 4 x 0.500 (8.00)

2. **Select the correct Spline Plate to suit the Gearbox Input Shaft**
   Using the example, go to the Gearbox Details to find the Borg Warner 72 has a 26 Tooth 20/40 DP input spline. In the Selection Chart below look down the Element Fixing column find 4 x 0.500 (8.00) looking across find the 26T 20/40 DP input spline, in the next column is the correct code of 48 for the spline plate. The furthest column to the right gives the reference number of the Back Plates available for this Element fixing, in this case List 7

3. **Select the correct Back Plate to suit the Flywheel**
   Using the example, go to the Back Plate List on page 4. Looking down the list find the matching bolt pattern, in this case Back Plate 2

Damper Required for this example Spline Plate **48** Element **AD** Back Plate **2**

Spline	Spline Plate No	Element Code Group 1 (ZZ1)	Element Code Group 2 (ZZ2)	Element Fixing	Damper Dimensions Black mm WW	XX	YY	Red inches Group 1 ZZ 1	Red inches Group 2 ZZ 2	Back Plate Ref
22T PA 30	1	AM		3 x 0.375	0.0 0.00	25.4 1.00	32.0 1.25	127 5.00		4, 8
26T 20/40 DP	2	W,		(4.00)	2.3 0.09	25.4 1.00	32.0 1.25	127 5.00		37, 43
17T 24/48 DP	12	A, B,			0.0 0.00	25.4 1.00	32.0 1.25	127 5.00		49, 60
1.000 x 10 SAE	13				0.0 0.00	25.4 1.00	32.0 1.25	127 5.00		91, 95
10T DIN 5464	22				0.0 0.00	25.4 1.00	32.0 1.25	127 5.00		
20T 30PA 24/48 DP	66				0.0 0.00	25.4 1.00	32.0 1.25	127 5.00		
26T 20/40 DP	42	AN		4 x 0.375	5.0 0.20	25.4 1.00	35.0 1.38	182 7.13		8, 37
10T DIN 5464	43			(6.00)	0.0 0.00	25.4 1.00	35.0 1.38	182 7.13		49, 60
17T 24/48 DP	44				0.0 0.00	25.4 1.00	35.0 1.38	182 7.13		91, 94
17T 16/32 DP	46				1.8 0.07	25.4 1.00	35.0 1.38	182 7.13		
1.000 x 10 SAE	45				2.3 0.09	25.4 1.00	35.0 1.38	182 7.13		
20T 30PA 24/48 DP	65				0.0 0.00	25.4 1.00	35.0 1.38	182 7.13		
26T 20/40 DP	71	AL		4 x 0.375	12.5 0.49	26.4 1.04	34.0 1.34	194 7.64		145, 146
26T 20/40 DP	76			(6.50)	5.0 0.20	26.4 1.04	34.0 1.34	194 7.64		147, 148
10T DIN 5464	72				0.0 0.00	26.4 1.04	34.0 1.34	194 7.64		149
17T 16/32 DP	73				2.4 0.09	26.4 1.04	34.0 1.34	194 7.64		
1.000 x 10 SAE	74				2.6 0.10	26.4 1.04	34.0 1.34	194 7.64		
20T 30PA 24/48 DP	75				1.0 0.04	26.4 1.04	34.0 1.34	194 7.64		
26T 20/40 DP	3	D, L,	E, G, M	5 x 0.375	5.0 0.20	25.4 1.00	35.0 1.38	175 6.90	207 8.13	1, 2
26T 20/40 DP	5			(5.593)	5.0 0.20	25.4 1.00	35.0 1.38	175 6.90	207 8.13	3, 5
1.000 x 10 SAE	14				2.3 0.09	25.4 1.00	35.0 1.38	175 6.90	207 8.13	17, 25
1.125 x 10 SAE	16				2.3 0.09	25.4 1.00	35.0 1.38	175 6.90	207 8.13	35, 36
17T 16/32 DP	18				1.8 0.07	25.4 1.00	35.0 1.38	175 6.90	207 8.13	40
10T DIN 5464	23				0.0 0.00	25.4 1.00	35.0 1.38	175 6.90	207 8.13	
17T 24/48 DP	32				0.0 0.00	25.4 1.00	35.0 1.38	175 6.90	207 8.13	
26T 20/40 DP	4	Y, U, R,	K, V, P	5 x 0.500	5.0 0.20	28.7 1.13	35.0 1.38	182 7.13	207 8.13	1, 2
26T 20/40 DP Long	9			(5.593)	0.0 0.00	28.7 1.13	43.0 1.69	182 7.13	207 8.13	3, 5
18T 12/24 DP	21				0.0 0.00	28.7 1.13	38.1 1.50	182 7.13	207 8.13	17, 25
17T 16/32 DP	31				1.8 0.07	28.7 1.13	35.0 1.38	182 7.13	207 8.13	35, 36
32T 16/32 DP	26				0.0 0.00	38.5 1.52	57.2 2.25		207 8.13	40
1.625 x 10	27				0.0 0.00	28.7 1.13	38.1 1.50		207 8.13	
1.500 x 10	11				0.0 0.00	28.7 1.13	38.1 1.50	182 7.13	207 8.13	
PR 1500	54				0.0 0.00	63.2 2.49	79.3 3.12		207 8.13	
26T 20/40 DP	4	S		5 x 0.500	5.0 0.20	31.8 1.25	35.0 1.38	207 8.13		14, 15
26T 20/40 DP Long	9			(5.593)	0.0 0.00	31.8 1.25	43.0 1.69	207 8.13		52
18T 12/24 DP	21				0.0 0.00	31.8 1.25	38.1 1.50	207 8.13		
32T 16/32 DP	26				0.0 0.00	41.7 1.64	57.2 2.25	207 8.13		
1.625 x 10	27				0.0 0.00	31.8 1.25	38.1 1.50	207 8.13		
1.500 x 10	11				0.0 0.00	31.8 1.25	38.1 1.50	207 8.13		
PR 1500	54				0.0 0.00	66.3 2.61	79.3 3.12	207 8.13		
26T 20/40 DP	6	H, N		4 x 0.500	5.0 0.20	29.5 1.16	36.0 1.41	183 7.19		6, 13
26T 20/40 DP HT	8			(4.50)	5.0 0.20	29.5 1.16	36.0 1.41	183 7.19		
1.500 x 10	10				0.0 0.00	29.5 1.16	36.0 1.41	183 7.19		
1.500 x 10 SAE	17				2.3 0.09	29.5 1.16	36.0 1.41	183 7.19		
17T 16/32 DP	19				1.8 0.07	29.5 1.16	36.0 1.41	183 7.19		
1.625 x 10	28				0.0 0.00	29.5 1.16	38.1 1.50	183 7.19		
26T 20/40 DP	7	AJ		3 x 0.500	8.1 0.32	29.5 1.16	36.0 1.41	158 6.19		7
1.000 x 10 SAE	15	F, J,		(4.50)	2.3 0.09	29.5 1.16	36.0 1.41	158 6.19		
17T 16/32 DP	20				1.8 0.07	29.5 1.16	36.0 1.41	158 6.19		
17T 24/48 DP	41				1.8 0.07	29.5 1.16	36.0 1.41	158 6.19		
26T 20/40 DP	48	AD		4 x 0.500	6.0 0.24	29.0 1.14	36.0 1.41	235 9.25		1, 2, 3
17T 16/32 DP	49			(8.00)	1.8 0.07	29.0 1.14	36.0 1.41	235 9.25		5, 17
26T 20/40 DP	57				0.0 0.00	29.0 1.14	36.0 1.41	235 9.25		25, 34
32T 16/32 DP	40	Z, AF		6 x 0.625	0.0 0.00	44.2 1.74	57.2 2.25	330 13.00		78, 79
PR 1500	55			(8.00)	0.0 0.00	68.6 2.70	79.3 3.12	330 13.00		
26T 20/40 DP	56				0.0 0.00	44.2 1.74	51.6 2.03	330 13.00		
32T 16/32 DP	40	AH		6 x 0.625	0.0 0.00	47.3 1.86	57.2 2.25	330 13.00		78, 79
PR 1500	55			(8.00)	0.0 0.00	71.9 2.83	79.3 3.12	330 13.00		
26T 20/40 DP	56				0.0 0.00	47.3 1.86	51.6 2.03	330 13.00		
26T 20/40 DP	50	AE		4 x 0.500	0.0 0.00	31.8 1.25	39.0 1.53	302 11.88		101, 103
18T 12/24 DP	51			(10.25)	0.0 0.00	31.8 1.25	39.0 1.53	302 11.88		
17T 16/32 DP	52				0.0 0.00	31.8 1.25	39.0 1.53	302 11.88		

Back Plate Details

Ref	O/D Met	O/D Imp	Flywheel Fixing Metric	Flywheel Fixing Imperial	Remarks
1	298.5	11.75	6 x 8.1 on 200 6 x 8.1 on 250 6 x 8.1 on 269.9 6 x 8.1 on 273	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.75	
2	362	14.25	6 x 8.1 on 200 6 x 8.1 on 210 6 x 8.1 on 263 6 x 8.1 on 269.9 6 x 8.1 on 276.3 6 x 8.1 on 289 6 x 8.1 on 295.3 6 x 8.8 on 304.8 6 x 8.1 on 314.4 6 x 9.5 on 320.7 12 x 9.5 on 343 Ford	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.00 6 x .32 on 12.375 6 x .375 on 12.625 12 x .375 on 13.5 Ford	
3	336.5	13.24	6 x 8.1 on 200 6 x 8.1 on 210 6 x 8.1 on 263 6 x 8.1 on 269.9 6 x 8.1 on 276.3 6 x 8.1 on 289 6 x 8.1 on 295.3 6 x 8.8 on 304.8 6 x 8.1 on 314.4 6 x 9.5 on 320.7	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.00 6 x .32 on 12.375 6 x .375 on 12.625	
4	155.45	6.12	5 x 6.35 on 142	5 x .25 on 5.593	
5	352.5	13.875	8 x 10.6 on 333.4	8 x .416 on 13.125	SAE 11.5
6	202.6	7.978	8 x 8.1 on 181	8 x .32 on 7.125	
7	180.8	7.12	9 x 6.35 on 167.4	9 x .25 on 6.589	
8	298.5	11.75	6 x 8.1 on 200 6 x 8.1 on 250 6 x 8.1 on 269.9 6 x 8.1 on 273	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.75	
13	234	9.212	6 x 13.1 on 210	6 x .515 on 8.267	
14	352.5	13.875	8 x 10.6 on 333.4	8 x .416 on 13.125	SAE 11.5
15	362	14.25	12 x 9.5 on 342.9	12 x .375 on 13.50	Ford
17	314.3	12.375	6 x 8.1 on 200 6 x 8.1 on 250 6 x 8.1 on 269.9 6 x 8.1 on 273 8 x 10.6 on 296	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.750 8 x .416 on 11.625	SAE 10

Ref	O/D Met	O/D Imp	Flywheel Fixing Metric	Flywheel Fixing Imperial	Remarks
25	287.4	11.312	6 x 9.1 on 269.96 6 x 6.3 on 269.96	6 x .356 on 10.625 3 x .25 on 10.625	TAMD 40
34	466.7	18.375	8 x 13.5 on 438.15	8 x .53 on 17.250	SAE 14
35	263.5	10.375	6 x 9.5 on 244.5	6 x .375 on 9.625	SAE 8
36	266.7	10.5	12 x 8.1 on 222.3 6 x 8.1 on 244.5 Spaced 3 groups of 2 apart 23°59`07 12 x 8.1 on 246 12 x 8.1 on 242	12 x .32 on 8.750 6 x .32 on 9.625 Spaced 3 groups of 2 apart 23°59`07 12 x .32 on 9.685 12 x .32 on 9.527	Suit Ford XLD And Mitsubishi
37	266.7	10.5	12 x 8.1 on 222.3 6 x 8.1 on 244.5 Spaced 3 groups of 2 apart 23°59`07 12 x 8.1 on 246 12 x 8.1 on 242	12 x .32 on 8.750 6 x .32 on 9.625 Spaced 3 groups of 2 apart 23°59`07 12 x .32 on 9.685 12 x .32 on 9.527	Suit Ford XLD And Mitsubishi
40	241.3	9.500	8 x 8.5 on 222.25	8 x .334 on 8.750	SAE 7.5
43	263.5	10.375	6 x 9.5 on 244.5	6 x .375 on 9.625	SAE 7.5
49	241.3	9.500	8 x 8.5 on 222.25	8 x .334 on 8.750	Beta
60	215.9	8.500	6 x 8.1 on 200	6 x .32 on 7.875	SAE 6.5
78	352.5	13.875	8 x 10.6 on 333.4	8 x .416 on 13.125	SAE 11.5
79	466.7	18.375	8 x 13.5 on 438.15	8 x .53 on 17.250	SAE 14
91	314.3 -0.05 -0.13	12.375 -0.002 -0.005 SAE 10	6 x 8.1 on 200 6 x 8.1 on 250 6 x 8.1 on 269.9 6 x 8.1 on 273 8 x 10.6 on 296	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.750 8 x .416 on 11.625	SAE 10
94	287.4	11.312	6 x 9.1 on 269.96 6 x 6.3 on 269.96	6 x .356 on 10.625 3 x .25 on 10.625	Trans Auto TAMD 40
95	235	9.250	6 x 8.1 on 222.25	6 x .32 on 8.750	BETA
101	352.5	13.875	8 x 10.6 on 333.4	8 x .416 on 13.125	SAE 11.5
103	466.7	18.375	8 x 13.5 on 438.15	8 x .53 on 17.250	SAE 14
145	215.9	8.500	6 x 8.1 on 200	6 x .32 on 7.875	SAE 6.5
146	241.3	9.500	8 x 8.5 on 222.25	8 x .334 on 8.750	SAE 7.5
147	263.5	10.375	6 x 9.5 on 244.5	6 x .375 on 9.625	SAE 8
148	314.3	12.375	8 x 10.6 on 296	8 x .416 on 11.625	SAE 10
149	352.5	13.875	8 x 10.6 on 333.4	8 x .416 on 13.125	SAE 11.5

The above table shows some of the 160 standard back-plates we produce.
We can manufacture one off specials up to 533mm [21.0"] Ø. Please contact R & D Marine for your requirement. Details below

Designs are subject to constant review and improvement therefore we reserve the right to amend any dimension or detail specified or illustrated in this publication without notice and without incurring any obligation to provide such modification to products previously delivered.

R & D MARINE LTD.

Meadow Works
Clothall Road
Baldock
Hertfordshire
England
SG7 6PD

Contact Us By:
Tel: +44 (0)1462 892391
Fax: +44 (0)1462 896448
Web Site: www.randdmarine.com
E mail: info@randdmarine.com

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
1	11.75	3	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.750	5 x 3/8 5 x 1/2 on 5.593 PCD	
2	14.25	3	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.00 6 x .32 on 12.375 6 x .375 on 12.625 12 x .375 on 13.500 Ford	5 x 3/8 5 x 1/2 on 5.593 PCD	
3	13.245 +.000 -.010	3	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.000 6 x .32 on 12.375 6 x .375 on 12.625	5 x 3/8 5 x 1/2 on 5.593 PCD	
4	6.12	3	5 x .25 on 5.593	3 x 3/8 on 4.000 PCD	
5	13.875 -0.002 -0.005	3	8 x .416 on 13.125 SAE 11 1/2	5 x 3/8 5 x 1/2 on 5.593 PCD	SAE 11 1/2
6	7.976 7.980	4	8 x .32 on 7.125	4 x 1/2 on 4.500 PCD	
7	7.12	4	9 x .25 on 6.589	3 x 1/2 on 4.500 PCD	
8	11.75	3	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.750	3 x 3/8 on 4.000 PCD	
9	9.249 9.251	3	6 x .32 on 8.583	5 x 3/8 5 x 1/2 on 5.593 PCD	Mercedes
10	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	5 x 1/2 on 5.593 PCD C/Sunk	Special shaped plate for Deutz SAE 11 1/2
11	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	5 x 1/2 on 5.593 PCD C/Sunk	Special shaped plate for Caterpillar SAE 11 1/2
12	14.25	6	12 x .375 on 13.500	5 x 1/2 on 5.593 PCD	CANCELLED See Ref No 15
13	9.212	4	6 x .515 on 8.267	4 x 1/2 on 4.500 PCD	

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
14	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	5 x 1/2 on 5.593 PCD C/Sunk	SAE 11 1/2
15	14.25	6	12 x .375 on 13.500	5 x 1/2 on 5.593 PCD C/Sunk	Suit Ford
16	5.962 5.965	3	8 x .250 on 5.512	3 x 3/8 on 4.000 PCD	Hawker Siddley Fixing holes offset 7 1/2 degrees.
17	12.375 -0.002 -0.005 SAE 10	3	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.75 8 x 10.6 on 11.625	5 x 3/8 5 x 1/2 on 5.593 PCD	SAE 10
18	9.94	3	12 x .32 on 8.75 6 x .32 on 9.213 6 x .32 on 9.375 6 x .32 on 9.25 spaced 36-84 degrees	3 x 3/8 on 4.000 PCD	Lancing “10”
19	10.375	3	6 x .32 on 9.683 6 x .32 on 9.875 6 x .32 on 9.842 12 x .32 on 9.528	3 x 3/8 on 4.000 PCD	Lancing “11”
20	12.125	3	6 x .32 on 10.625 12 x .32 on 10.750 6 x .375 on 11.625	3 x 3/8 on 4.000 PCD	Lancing “12”
21	12.125	3	6 x .32 on 10.625 12 x .32 on 10.750 6 x .375 on 11.625	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing “12”
22	14.250	3	6 x .375 on 11.625 6 x .32 on 12.062 8 x .375 on 12.625 9 x .32 on 12.375 Spaced 30-32-58 degrees 8 x .375 on 13.125 12 x .375 on 13.50	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing “14”
23	15.337	3	12 x .375 on 14.125 12 x .375 on 14.500 12 x .375 on 14.750 12 x .375 on 13.500	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing “15”
24	19.000	3	12 x .433 on 17.25 12 x .433 on 18.25 8 x .433 on 13.500	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing “19”
25	11.312 -0.002 -0.005	3	6 x .356 on 10.625 (269.875) 3 x .250 on 10.625 (269.875)	5 x 3/8 5 x 1/2 on 5.593 PCD	Trans Auto TAMD 40
26	9.840	3	6 x .356 on 8.750 6 x .250 on 8.750	5 x 3/8 5 x 1/2 on 5.593 PCD	Godiva Fire Pumps Suit Ford XLD 1.6

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
27	13.875 -0.002 -0.005	3	8 x .416 on 13.125 6 x .334 on 12.375 spaced 32-88 degrees	5 x 3/8 5 x 1/2 on 5.593 PCD	Newage MT 4597
28	14.250	6	6 x .375 on 11.625 6 x .32 on 12.062 8 x .375 on 12.625 9 x .32 on 12.375 spaced 30-32-58 degrees 8 x .375 on 13.125 12 x .375 on 13.500	5 x 1/2 on 5.593 PCD C/Sunk	Lancing "14" For 750 lb ft. SCG
29	15.337	6	12 x .375 on 14.500 12 x .375 on 13.500	5 x 1/2 on 5.593 PCD C/Sunk	Lancing "15" For 750 lbs ft. SCG
30	19.000	6	12 x .433 on 17.25 12 x .433 on 18.25 8 x .433 on 13.500	5 x 1/2 on 5.593 PCD C/Sunk	Lancing "19" For 750 lbs ft. SCG
31	12.362 +.000 -.020	3	8 x .375 on 11.625	5 x 3/8 5 x 1/2 on 5.593 PCD	Hands
32	13.740 +.000 -0.004	3	3 x .356 (9mm) on 12.875 3 x .356 (9mm) on 12.875 spaced 33 56 to the first three	5 x 3/8 5 x 1/2 on 5.593 PCD	Tatko
33	15.940	3	12 x .375 (9.5mm) on 14.500 2 x .375 (9.5mm) on 14.331 180 degrees apart, spaced 15 degrees from 1st set	5 x 3/8 5 x 1/2 on5.593 PCD	Dintra
34	18.375 -0.002 -0.005	3	8 x .53 on 17.250 SAE 14	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra SAE 14
35	10.375 -0.002 -0.005	3	6 x .375 on 9.625 SAE 8	5 x 3/8 5 x 1/2 on 5.593 PCD	SAE 8
36	10.5	3	12 x 8.1mm on 8.750 6 x 8.1mm on 9.625 spaced 3 groups of 2 23 59 07 degrees apart 12 x 8.1mm on 9.685 12 x 8.1mm on 9.527	5 x 3/8 5 x 1/2 on 5.593 PCD	Suit Ford XLD And Mitsubishi
37	10.5	3	12 x 8.1mm on 8.750 6 x 8.1mm on 9.625 spaced 3 groups of 2 23 59 07' apart 12 x 8.1mm on 9.685 12 x 8.1mm on 9.527	3 x 3/8 on 4.000 PCD	Suit Ford XLD And Mitsubishi

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
38	15.551 (395mm)	3	8 x 9mm spaced 4 groups of 2 on 14.500 PCD (check space between each pair 89mm)	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra Use 4.000 Ø drum 4 sets of holes 62 & 28 degree spacing
39	7.015 +.000 -0.005	3	5 x .334 on 6.375	3 x 3/8 on 4.000 PCD	Freedom Marine
40	9.500 -0.002 -0.005	3	8 x .334 on8.750 SAE 7 1/2	5 x 3/8 5 x 1/2 on 5.593 PCD	SAE 7 1/2
41	16.500 -0.002 -0.005	6	12 x .375 on 15.500	5 x 1/2 on 5.593 PCD C/Sunk	Mermaid
42	11.500	3	12 x 8.1 on 10.750	5 x 3/8 5 x 1/2 on 5.593 PCD	F.S.D
43	10.375 -0.002 -0.005	3	6 x 10mm on 9.625	3 x 3/8 on 4.000 PCD	
44	15.500	3	12 x .375 on 14.500	5 x 3/8 5 x 1/2 on 5.593 PCD	B.S.D
45	14.000	6	8 x .375 on 12.750	5 x 1/2 on 5.593 PCD C/Sunk	
46	14.000	6	12 x .375 on 12.750	5 x 1/2 on 5.593 PCD C/Sunk	
47	7.250	3	6 x 8mm on 6.299	3 x 3/8 on 4.000 PCD	Perkins Perama
48	9.249 9.251		6 x .32 on 8.583	3 x 3/8 on 4.000 PCD	
49	9.500 -0.002 -0.005	3	8 x .334 on 8.750 SAE 7 1/2	3 x 3/8 on 4.000 PCD	SAE 7 1/2
50	265.0	3	6 x .25 on 9.843 (250.0)	3 x 3/8 on 4.000 PCD	
51	7.250 -0.002 -0.005	3	6 x .312 on 6.688	3 x 3/8 on 4.000 PCD	
52	18.375 -0.002 -0.005	6	8 x .53 on 17.250 SAE 14	5 x 1/2 on 5.593 PCD C/Sunk	SAE 14
53	9.250 -0.002 -0.005	4	6 x 13.5mm (.531) on 8.250	3 x 1/2 on 4.500 PCD	
54	11.750	3	6 x 8mm on 10.625 3 x 10,03mm on 10.625	3 x 3/8 on 4.000 PCD	
55	15.940	3	8 x 10mm on 14.500	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra
56	15.551 +.000 -0.005	3	6 x 9mm on 14.724 12 x .375 on 14.500	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
57	10.375 +.000 -0.002	3	6 x 10,5mm on 9.625	5 x 3/8 5 x 1/2 on 5.593 PCD	V.M
58	15.500	6	12 x .375 on 14.500	5 x 1/2 on 5.593 PCD C/Sunk	
59	10.375	3	6 x .32 on 9.683 6 x .32 on 9.875 6 x .32 on 9.842 12 x .32 on 9.528	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing "11"
60	8.500 -0.002 -0.005	3	6 x .32 on 7.875 SAE 6 1/2	3 x 3/8 on 4.000 PCD	SAE 6 1/2
61	11.500	3	12 x 8.1mm on 10.750	3 x 3/8 on 4.000 PCD	F.S.D
62	7.000	3	6 x .250 on 6.375	3 x 3/8 on 4.000 PCD	Norris
63	9.940	3	12 x .32 on 8.75 6 x .32 on 9.213 6 x .32 on 9.375 6 x .32 on 9.252 spaced 36-84 degrees	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing "10"
64	8.000 Ø x 3mm + 2 rings 8.000 O/D 5.125 I/D	3	5 x .250 on 5.593	3 x 3/8 on 4.000 PCD	Perkins Prima
65	13.245 +.000 -.010	3	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.000 6 x .32 on 12.375 6 x .375 on 12.625	3 x 3/8 on 4.000 PCD	
66	16.500 -0.002 -0.005	3	12 x .375 on 15.500	5 x 3/8 5 x 1/2 on 5.593 PCD	Mermaid
67	7.976 7.980	3	8 x .32 on 7.125	3 x 3/8 on 4.000 PCD	Lancing
68	10.500	3	6 x 8.1 mm on 9.625 spaced in 3 groups of 2 23 59 07 degrees apart	3 x 3/8 on 4.000 PCD	Mitsubishi
69	284,0 -0.050 -0.130	3	6 x .356 on 10.625 (269.875) 3 x .250 on 10.625 (269.875)	3 x 3/8 on 4.000 PCD	Vetus Peugeot 4.25 Hole pattern same as 94 but turned O/D
70	8.480	3	6 x .32 on 7.875	3 x 3/8 on 4.000 PCD	

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
71	13.250	3	6 x .32 on 12.375 spaced 32-88 degrees 6 x .32 on 12.562 6 x .375 on 11.625 8 x .375 on 12.625	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing "13"
72	7.976 7.980	4	8 x .32 on 7.125	3 x 1/2 on 4.500 PCD	
73	6.850 +.000 -0.005	3	6 x 8.1mm on 5.91	3 x 3/8 on 4.000 PCD	Duffield
74	11.750	3	6 x 8.1mm on 10.625 (269.875)	3 x 3/8 on 4.000 PCD	Hawker Siddeley for inertia damper EXP 151
75 **D**	10.630	3	6 x 8.1mm on 8.750	3 x 3/8 on 4.000 PCD	Beta Dished 3mm to make effective length longer (Did have 6 off stepped washer 202-226 fitted to 11mm holes)
76	13.976 (355mm) +.010 -0.000	3	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.00 6 x .32 on 12.375 6 x .375 on 12.625 12 x .375 on 13.500 Ford	5 x 3/8 5 x 1/2 on 5.593 PCD	Tatko
77	6.260 +.000 -0.005	3	5 x .250 on 5.593	3 x 3/8 on 4.000 PCD	Dintra
78	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	6 x 5/8 on 8.000 PCD	For 1200 lb ft. damper 3.0" centre SAE 11 1/2
79	18.375 -0.002 -0.005	6	8 x .53 on 17.250 SAE 14	6 x 5/8 on 8.000 PCD	For 1200 lb ft. damper 3.0" centre SAE 14
80	9.249 9.251	4	6 x .32 on 8.583	3 x 1/2 on 4.500 PCD	Dintra
81	15.540	3	12 x 10.5mm on 367.5 2 x .375 on 363.5 12 x 9mm on 375	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra DAF Universal
82	335mm	3	6 x 11mm on 312mm	5 x 3/8 5 x 1/2 on 5.593 PCD	Beta, to have 6 off stepped washer 202-256 fitted to 11mm holes
83	10.630	3	6 x 8.1mm on 8.750	5 x 3/8 5 x 1/2 on 5.593 PCD	Beta

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
84	8.500 -0.002 -0.005	3	6 x .32 on 7.875 SAE 6 1/2	5 x 3/8 5 x 1/2 on 5.593 PCD	Beta SAE 6 1/2
85	7.480 +.000 -0.005 190 mm	4	6 x 8.1 on 6.693	3 x 1/2 on 4.500 PCD	
86 **D**	13.875 -0.002 -0.005	3	8 x .416 on 13.125	5 x 3/8 5 x 1/2 on 5.593 PCD	Sabre. Dished 10mm to make effective length of damper 10mm longer, element fitted to convex side
87	175mm	3	6 x .250 on 163mm	3 x 3/8 on 4.000 PCD	Dintra, Volvo 2010, 2020 2030, 2040
88	7.480 +.000 -0.005 190 mm	3	6 x 8.1mm on 6.693 170 mm	3 x 3/8 on 4.000 PCD	Nanni-Yanmar
89	14.250	3	6 x .32 on 7.875 6 x .32 on 8.268 6 x .32 on 10.375 6 x .32 on 10.625 6 x .32 on 10.875 6 x .32 on 11.375 6 x .32 on 11.625 6 x .344 on 12.00 6 x .32 on 12.375 6 x .375 on 12.625 12 x .375 on 13.500 Ford	3 x 3/8 on 4.000 PCD	
90	13.875 -0.002 -0.005	3	8 x .416 on 13.125 SAE 11 1/2	3 x 3/8 on 4.000 PCD	SAE 11 1/2
91	12.375 -0.002 -0.005 SAE 10	3	6 x .32 on 7.875 6 x .32 on 9.843 6 x .32 on 10.625 6 x .32 on 10.75 8 x 10.6 on 11.625	3 x 3/8 on 4.000 PCD	SAE 10
92	15.337	3	12 x .375 on 14.125 12 x .375 on 14.500 12 x .375 on 14.750 12 x .375 on 13.500	3 x 3/8 on 4.000 PCD	Lancing “15” same as 204-023
93	292mm	6	12 x 8.5 on 260.00 with 3 x 8mm dowel	6 x 5/8 on 8.000 PCD	For BPM/Twin Disc 5060 Right hand rotation (for L/H rotation see 204-115)
94	284,0 -0.050 -0.130	3	6 x .356 on 10.625 (269.875) 3 x .250 on 10.625 (269.875)	3 x 3/8 on 4.000	Volvo same as 204-025 Not normally stocked. Use plate 69 with the same hole pattern and turned O/D

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
95	235mm	3	6 x 8.1 on 222.2	3 x 3/8 on 4.000 PCD	Beta
96	13.25	3	6 x .32 on 12.375 spaced 32-88 degrees 6 x .32 on 12.562 6 x .375 on 11.625 8 x .375 on 12.625	3 x 3/8 on 4.000 PCD	Lancing "13" same as 204-071
97	15.000 -0.002 -0.005	3	6 x .32 on 12.375 12 x .375 on 13.500 8 x .375 on 14.500 Spaced 28-62 degrees	5 x 3/8 5 x 1/2 on 5.593 PCD	B/W AS3K2C
98	14.250	3	6 x .375 on 11.625 6 x .32 on 12.062 8 x .375 on 12.625 9 x .32 on 12.375 spaced 30-32-58 degrees 8 x .375 on 13.125 12 x .375 on 13.50	3 x 3/8 on 4.000 PCD	Lancing "14" Same as 204-022
99	**Specials ~ Details to be supplied by customer**				
100	341mm	6	6 x 8.1 on 321	6 x 5/8 on 8.000 PCD C/sunk	Lamborghini / Twin Disc For 1200 lb ft.
101	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	4 x 1/2 on 10.250 PCD AE	For 700 lb ft. AE SAE 11 1/2
102	13.189 +.000 -0.003	3	12 x 10.1 on 12.205	4 x 1/2 on 8.000 PCD AD	For AD Yanmar 4 LH
103	18.375 -0.002 -0.005	6	8 x .53 on 17.250 SAE 14	4 x 1/2 on 10.250 PCD AE	For 700 lb ft. AE SAE 14
104	14.250	6	12 x .375 on 13.500	4 x 1/2 on 10.250 PCD	For 700 lb ft. AE
105 **D**	265mm	3	6 x 8.1 on 242.000 3 x 6.35 on 242.000 Equi-Spaced in between 8.1 mm holes	5 x 3/8 5 x 1/2 on 5.593 PCD	With 3mm dish for Godiva to make effective length of damper 3mm longer
106 **D**	175mm	3	6 x .25 on 163.00	3 x 3/8 on 4.000 PCD	Volvo 2003 With 11mm dish for Dintra to make effective length of damper 11mm longer
107	12.375 -0.002 -0.005	6	8 x 10.6 on 11.625	5 1/2 on 5.593 PCD	3" Centre
108	240	3	6 x 11mm on 8.750	3 x 3/8 on 4.000 PCD	Calcutt with 6 off 202-226 stepped washer
109	11.750	3	6 x .32 on 7.875 6 x 11mm on 9.843 6 x 11mm on 10.625 6 x .32 on 10.750	3 x 3/8 on 4.000 PCD	Calcutt to have 6 off stepped washer 202-226 fitted to 11mm Ø holes on 10.625 PCD

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
110 D	12.375 -0.002 -0.005	3	8 x 10.6 on 11.625	3 x 3/8 on 4.000 PCD	With 3mm dish for PYI to make effective length of damper 3mm longer
111	276 mm -0.050 -0.100	3	6 x 8.1 mm on 250 mm	5 x 3/8 5 x 1/2 on 5.593 PCD	Yanmar JH
112	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	5 x 1/2 on 5.593 PCD C/Sunk	3" Centre Flywheel fixing same as 204-014 SAE 11 1/2
113	14.25	6	12 x .375 on 13.500	5 x 1/2 on 5.593 PCD C/Sunk	3" Centre Flywheel fixing same as 204-015
114	18.375 -0.002 -0.005	6	8 x .53 on 17.250 SAE 14	5 x 1/2 on 5.593 PCD C/Sunk	3" Centre Flywheel fixing same as 204-052
115	292mm	6	12 x 8.5 on 260.00 with 3 x 8mm dowel	6 x 5/8 on 8.000 PCD	For BPM/Twin Disc 5060 Left hand rotation
116	13.375	3	6 x .375 on 11.625 6 x .375 on 12.625	5 x 3/8 5 x 1/2 on 5.593 PCD	Mercruiser
117	276 mm -0.050 -0.100	3	6 x 8.1 mm on 250mm	3 x 3/8 on 4.000 PCD	Yanmar JH
118	170 mm -.05 -.15	3	6 x 8.1 mm on 150mm	3 x 3/8 on 4.000 PCD	Yanmar 3GM
119	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	6 x 5/8 on 8.000 PCD C/sunk	For 1200 lb ft. damper 2" Centre SAE 11 1/2
120	182 mm -.05 -.15	3	3 x 12 mm on 160 mm	3 x 3/8 on 4.000 PCD	Barrus Yanmar
121	288 mm	3	6 x 8.5mm on 270 mm 6 x 0.250 on 272 mm 1st hole spaced 13.5 degrees to the right of 8.5mm hole set, then equally spaced at 60 degrees	5 x 3/8 5 x 1/2 on 5.593 PCD	Lancing Ford Puma I-4
122	268 mm	3	6 x 8.1 mm on 245.5 Spaced 35-85 3 x 6.35 mm on 245.5	3 x 3/8 on 4.000 PCD	Dintra "268" Peugeot
123	6.12	3	5 x .25 on 5.593	3 x 3/8 on 4.000 PCD	Same as 204-004 (Ref 4) with 202-245 Rivets for BETA
124	243 mm -.05 -.15	3	6 x 7.5 on 231.5 mm	3 x 3/8 on 4.000 PCD	Dintra "243"
125	253 mm -.05 -.15	3	6 x 9 on 237 mm	3 x 3/8 on 4.000 PCD	Dintra "253"

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
126	265 mm -.05 -.15	3	6 x 9 on 250 mm	3 x 3/8 on 4.000 PCD	Dintra "265"
127	288 mm	3	6 x 8.5mm on 270 mm 6 x 0.250 on 272 mm 1st hole spaced 13 1/2 degrees to the right of 8.5mm hole set, then equally spaced at 60 degrees	3 x 3/8 on 4.000 PCD	Lancing Ford Puma I-4
128 **D**	250 mm	3	6 x 9.0 on 222.2 3 x 6.35 dowel holes on 222.2 Equi-spaced between 9.0 mm holes	5 x 3/8 5 x 1/2 on 5.593 PCD	With 3mm Dish for Hale products (Godiva) to make effective length of damper 3mm longer, element fitted to convex side to have 3.0" hole in middle With 202-245 pins
129 **D**	9.94	3	12 x .32 on 8.75 6 x .32 on 9.213 6 x .32 on 9.375 6 x .32 on 9.25 spaced 36-84 degrees	4 x 3/8 on 6.00 for AG	Lancing "10" Old no 18 With 3mm dish to make effective length of damper 3mm longer
130 **D**	10.375	3	6 x .32 on 9.683 6 x .32 on 9.875 6 x .32 on 9.842 12 x .32 on 9.528	4 x 3/8 on 6.00 for AG	Lancing "11" Old no 19 With 3mm dish to make effective length of damper 3mm longer
131 **D**	12.125	3	6 x .32 on 10.625 12 x .32 on 10.750 6 x .375 on 11.625	4 x 3/8 on 6.00 for AG	Lancing "12" Old no 20 With 3mm dish to make effective length of damper 3mm longer
132 **D**	11.500	3	12 x 8.1mm on 10.750	4 x 3/8 on 6.00 for AG	Lancing F.S.D Old no 61 With 3mm dish to make effective length of damper 3mm longer
133	8.500 -0.002 -0.005	3	6 x .32 on 7.875 SAE 6 1/2	3 x 3/8 on 4.000 PCD	SAE 6 1/2 Same as 204-060 (Ref 60) with 202-245 Rivets for BETA
134 **D**	13.875 -0.002 -0.005	3	8 x .416 on 13.125	5 x 3/8 5 x 1/2 on 5.593 PCD	Dintra. Dished 10mm to make effective length of damper 10 mm shorter, element fitted to concave side
135 **D**	9.500 -0.002 -0.005	3	8 x .334 on 8.750 SAE 7 1/2 Could only make 11mm	3 x 3/8 on 4.000 PCD *No longer available*	HMI Plant Dished 12mm to make effective length of damper 12mm shorter, element fitted to concave side SAE 7 1/2
136 **D**	10.500	3	6 x 8.1 mm on 9.625 spaced in 3 groups of 2 23 59 07 degrees apart	4 x 3/8 on 6.00 for AN	Mitsubishi with 3mm dish to make effective length of damper 3mm longer

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
137	13.625	3	6 x .5 on 12.500	5 x 3/8 on 5.593 PCD	Coastal Rides. To have 6 off stepped spacer 202-481 fitted in .50 Ø holes to increase the effective length
138	18.375 -0.002 -0.005	3	8 x .53 on 17.250 SAE 14	3 x 3/8 on 4.000 PCD	SAE 14
139 **D**	13.189 +.000 -0.003	3	12 x 10.1 on 12.205	4 x 1/2 on 8.000 PCD AD	Originally for Barrus Yanmar 6 LP. AD Element Dished 10mm to make effective length of damper 10 mm shorter, element fitted to concave side
140	294 mm	3	6 x 8mm on 278 mm Equi-spaced 3 x 0.250 on 278 mm equally spaced in between bolt holes	4 x 3/8 on 6.00 PCD For AG	Lancing Ford Puma I-4 Upgrade
141 **D**	10.500	3	6 x 8.1 mm on 9.625 spaced in 3 groups of 2 23 59 07 degrees apart	3 x 3/8 on 4.000 PCD	Mitsubishi With 3mm dish to make effective length of damper 3mm longer
142 **D**	12.375 -0.002 -0.005	3	8 x 10.6 on 11.625 SAE 10	3 x 3/8 on 4.000 PCD	Originally for Barrus Dished 11mm to make effective length of damper 11 mm shorter, element fitted to concave side SAE 10
143	185 mm -0.05 -0.13	3	6 x 6.35 on 175	3 x 3/8 on 4.000 PCD	HMI/ Sole 44 & 33
144	9.213 9.211	4	6 x 0.515 on 8.268	4 x 1/2 on 4.500 PCD	Originally for GB Marine Bore element to 62mm
145	8.500 -0.002 -0.005	4	6 x 0.334 on 7.875 SAE 6 1/2	4 x 3/8 on 6.500 PCD for AL	SAE 6 1/2 AL
146	9.500 -0.002 -0.005	4	8 x 0.334 on 8.750 SAE 7 1/2	4 x 3/8 on 6.500 PCD for AL	SAE 7 1/2 AL
147	10.375 -0.002 -0.005	4	6 x 0.375 on 9.625 SAE 8	4 x 3/8 on 6.50 PCD for AL	SAE 8 AL
148	12.375 -0.002 -0.005	4	8 x 0.416 on 11.625 SAE 10	4 x 3/8 on 6.50 PCD for AL	SAE 10 AL
149	13.875 -0.002 -0.005	4	8 x 0.416 on 13.125 SAE 11 1/2	4 x 3/8 on 6.50 PCD for AL	SAE 11 1/2 AL

Damper Back Plate by Reference 04/07/2018

Ref No	Outside Ø	Thickness	Punching Details & Flywheel fixing	Element fixing	Remarks
150 **D**	9.500 -0.002 -0.005	3	8 x .334 on 8.750 SAE 7 1/2	3 x 3/8 on 4.000 PCD	Dished 11mm to make effective length of damper 11mm longer, element fitted to convex side SAE 7 1/2
151	8.500 -0.002 -0.005	3	6 x .32 on 7.875 SAE 6 1/2	4 x 3/8 on 6.000 PCD For AG	With 2 flats 196mm A/F SAE 6 1/2
152	435 -0.05 -0.13	6	12 x 10mm on 410	6 x 5/8 on 8.000 PCD	For Power Torque
153	216 -0.05 -0.13	3	6 x 8.1 on 182.4	3 x 3/8 on 4.000 PCD	BLADT Diesel
154	263.5 -0.05 -0.13	3	8 x 0.416 on 241.3	4 x 3/8 on 6.000 PCD for AG	BLATD Diesel
155	263.5 -0.05 -0.13	4	8 x 0.416 on 241.3	4 x 3/8 on 6.500 PCD for AL	BLATD Diesel
156	243 mm -0.05 -0.15	3	6 x 7.5 on 231.5 mm	5 x 3/8 on 5.593 PCD	Dintra “243”
157	13.875 -0.002 -0.005	6	8 x .416 on 13.125 SAE 11 1/2	4 x 1/2 on 10.250 PCD AE	Turned outer edge to make shorter. 304mmØ x 3mm deep on back Yanmar 6LY. Can modify 204-101
158 **D**	10.5	3	12 x 8.1mm on 8.750 6 x 8.1mm on 9.625 spaced 3 groups of 2 23 59 07 degrees apart 12 x 8.1mm on 9.685 12 x 8.1mm on 9.527	5 x 3/8, 5 x 1/2 on 5.593” PCD	Suit Ford XLD And Mitsubishi + 3mm Dish
159	13.875	6	8 x 10.5mm on 13.125" SAE 11-1/2	6 x 5/8 on 8.000 PCD 6 x 1.0 on 8.000 PCD	Same as REF 78 all but 5/8 Holes which are C/Sunk on the opposite side, for 1200 lb ft. damper 3.0" centre
160	232.00 0.0 -0.05	3	6 x 8.1 on 213.0mm	3 x 3/8 & 3 x 5/8 on a 4.000 PCD (AN)	For Barrus Special Damper 88AN160 Spline Plate 4.0mm thick