

BAB VI

KESIMPULAN DAN SARAN

6.1. KESIMPULAN.

Berdasarkan hasil penelitian dan pembahasan yang telah dikemukakan pada bab sebelumnya maka diperoleh beberapa kesimpulan sebagai berikut :

1. Jenis kerusakan yang sering terjadi terdapat 5 jenis kerusakan komponen yaitu :
 - ◆ double nedle bearing (21,72 %).
 - ◆ SKF bearing (15,57 %).
 - ◆ trush ball bearing (15,57 %).
 - ◆ drive plate (4,91 %).
 - ◆ floating plate (4,91 %).
2. Rata-rata interval waktu kerusakan mesin Wutan I adalah 30 hari, Wutan II adalah 28 hari, Wutan III adalah 29 hari, dan mesin Wutan IV adalah 28 hari, dan Distribusi waktu kerusakan untuk mesin Wutan I, II, III, dan IV adalah eksponensial.
3. Dengan model perawatan preventif yang digunakan diperoleh keluaran :
 - ◆ interval perawatan preventif yang optimal adalah 50 hari,
 - ◆ biaya perawatan korektif adalah Rp. 3.085.000 persekali kerusakan,
 - ◆ biaya perawatan preventif adalah Rp. 4.035.000 persekali kerusakan.
 - ◆ ekspektasi keuntungan permesin perhari Rp. 4.407.796,80.

4. Dengan model yang sekarang digunakan diketahui bahwa ekspektasi keuntungan permesin perhari Rp. 4.403.245,93.
5. Dengan model yang diusulkan ekspektasi keuntungan permesin perhari dapat meningkat menjadi Rp. 4.550,87 permesin perhari.


6.2. SARAN-SARAN.

Berdasarkan hasil penelitian yang diperoleh maka perlu dikemukakan saran-saran sebagai berikut :

1. Perusahaan menerapkan model perawatan preventif dengan interval perawatan sebesar 50 hari secara konstan karena lebih efisien,
2. Perusahaan membuat persiapan yang diperlukan untuk menerapkan kebijakan perawatan preventif dengan prosedur yang jelas dan dimengerti oleh semua karyawan.

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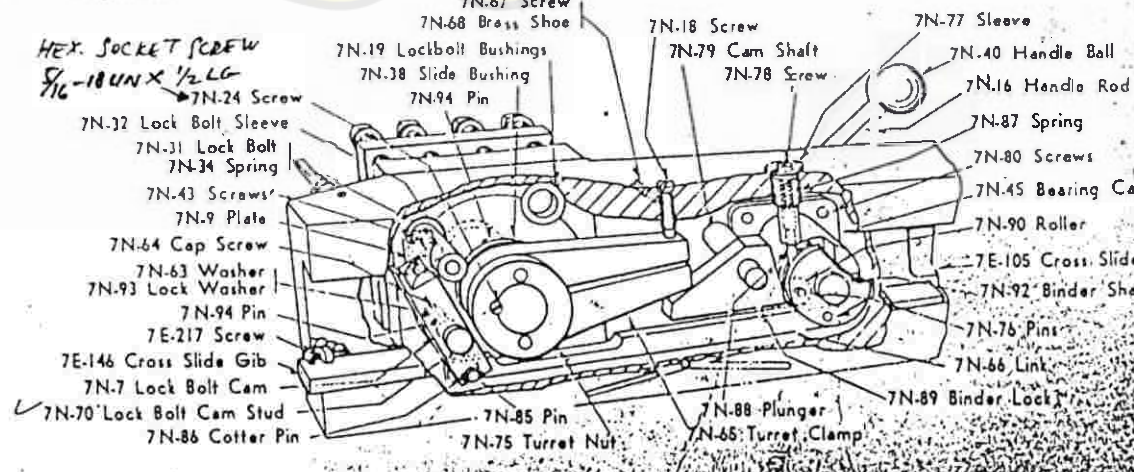
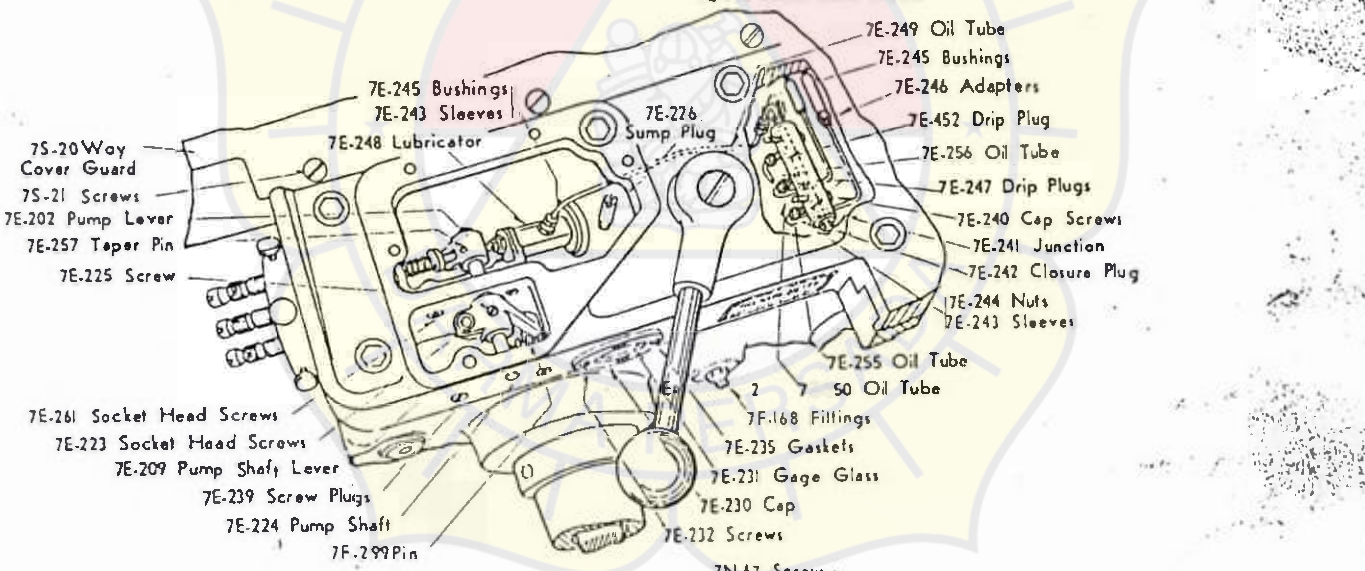
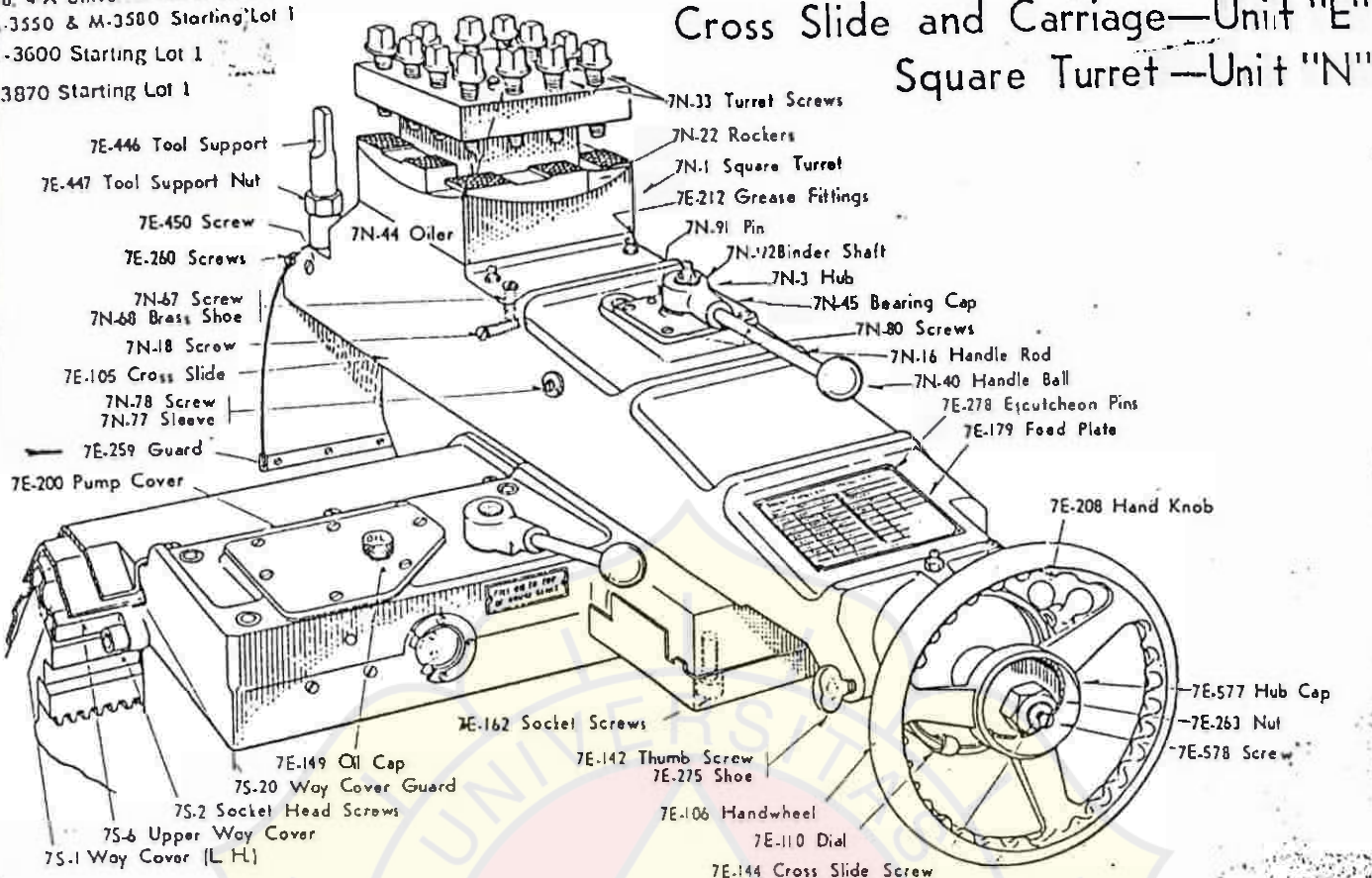
LAMPIRAN - LAMPIRAN

The logo of Universitas Darma Persada is a large, light yellow emblem with a scalloped border. It features a central shield with a red and white design, flanked by two stars. The text "UNIVERSITAS" is arched across the top, and "DARMA PERSADA" is arched across the bottom. In the center of the shield is a figure, possibly a deity or a personification of knowledge, holding a book and a torch.

Lampiran 1
Gambar Mesin Bubut

4-A Universal Turret Lathe
M-3550 & M-3500 Starting Lot 1
M-3600 Starting Lot 1
M-3870 Starting Lot 1

Cross Slide and Carriage—Unit "E" Square Turret—Unit "N"



UNIVERSAL TURRET LATHE

Starting Lot 1

Starting Lot 2

Plate 16a
Carriage Apron Rapid Traverse - Unit "Q"

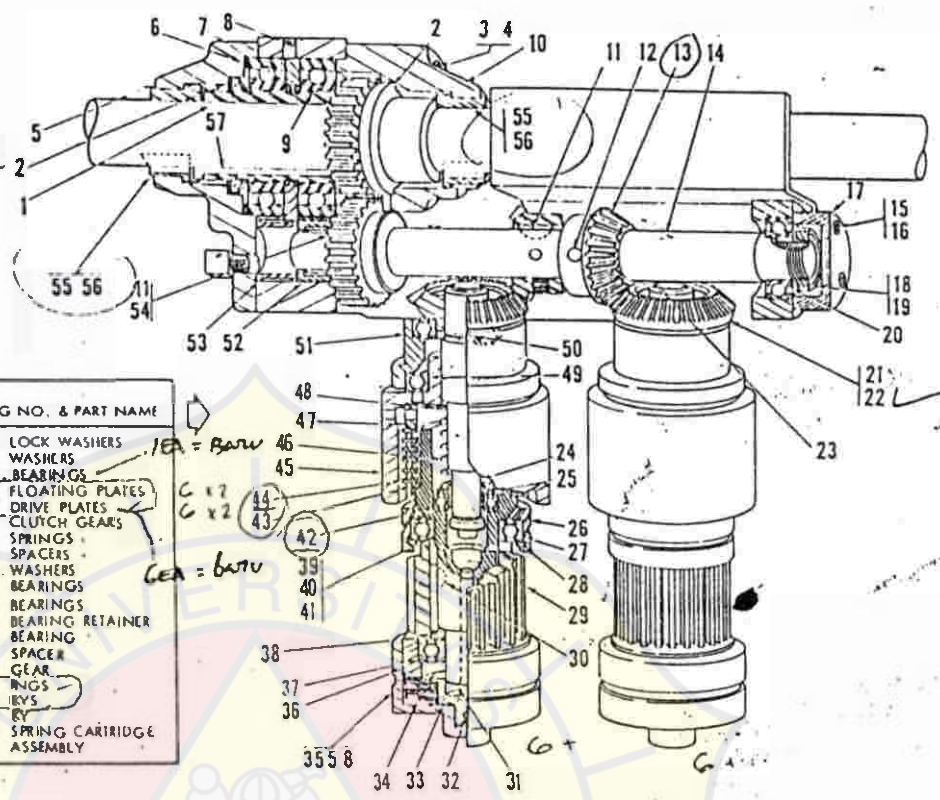
PARTS PERTAINING ONLY
TO THE APRON RAPID TRAVERSE
UNIT NOTIFIED ON PLATE 21

ORDER BY CATALOG NUMBER
AND PART NAME

CATALOG NO. & PART NAME

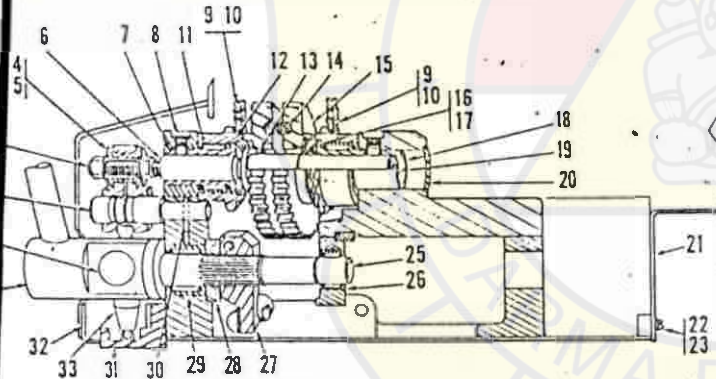
13Q-454	GEAR
13Q-412	OIL SEAL
13Q-1267	SOCKET SCREWS
13Q-1260	LOCK WASHERS
13Q-403	COVER PLATE
13Q-465	SHIM
13Q-488	RINGS
13Q-753	SHOGE
13Q-495	BEARING
13Q-402	COVER PLATE
13Q-780	KEYS
13Q-510	PINS
13Q-452	GEARS
13Q-451	SHAFT
13Q-507	SOCKET SCREWS
13Q-484	LOCK WASHERS
13Q-484	BEARING CAP
13Q-491	NUTS
13Q-492	LOCK WASHERS
13Q-496	BEARINGS
13Q-511	KEYS
13Q-450	GEARS
13Q-487	SNAP RINGS
13Q-439	SHAFTS
13Q-448	SPRING SEATS
13Q-751	SLEEVES
13Q-494	BEARINGS
13Q-750	SNAP RINGS
13Q-441	GEARS
13Q-780	KEYS
13Q-443	SHAFTS
13Q-1760	PINS
13Q-1261	SPRING PILOTS
13Q-1262	BELLEVILLE SPRINGS
13Q-1264	PILOTTED PUSHERS
13Q-1263	RETAINERS
13Q-496	BEARING
13Q-447	SPACERS
13Q-466	SCREWS

ITEM NO.	CATALOG NO. & PART NAME
40	13Q-509 LOCK WASHERS
41	13Q-470 WASHERS
42	13Q-493 BEARINGS
43	13Q-749 FLOATING PLATES
44	13Q-748 DRIVE PLATES
45	13Q-440 CLUTCH GEARS
46	13Q-449 SPRINGS
47	13Q-747 SPACERS
48	13Q-746 WASHERS
49	13Q-745 BEARINGS
50	13Q-744 BEARINGS
51	13Q-743 BEARING RETAINER
52	13Q-497 BEARING
53	13Q-462 SPACER
54	13Q-453 GEAR
55	13Q-1031 RINGS
56	13Q-1030 KEYS
57	13Q-455 RINGS
58	13Q-1277 SPRING CARTRIDGE ASSEMBLY



See behind

GEA = BARU
G x 2
G x 2

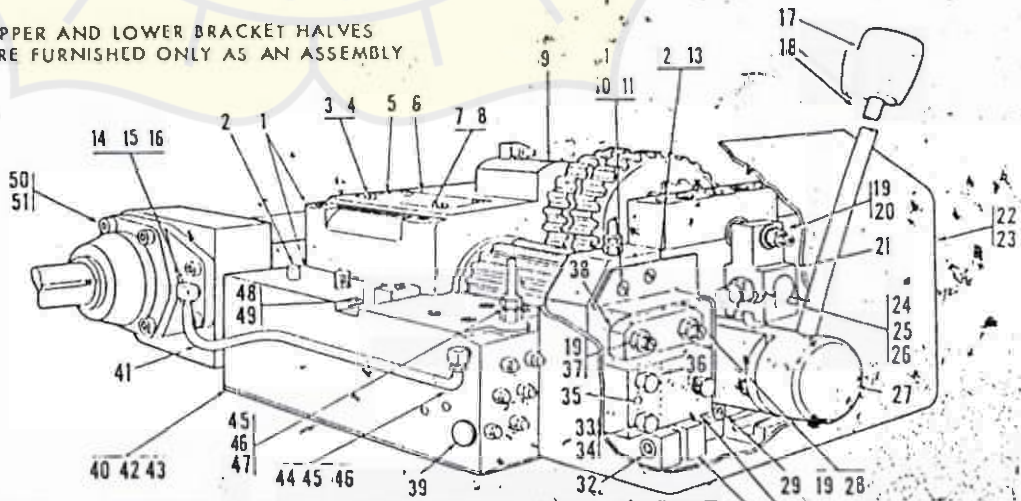


ORDER BY CATALOG NUMBER AND PART NAME

ITEM NO.	CATALOG NO. & PART NAME
1	13Q-757 STUD
2	13Q-727 JAM NUTS
3	13Q-726 LOCK WASHERS
4	13Q-425 NUTS
5	13Q-424 KEY
6	13Q-426 SHAFT
7	13Q-408 BUSHING
8	13Q-464 SCREWS
9	13Q-504 CHAIN
10	13Q-754 CONNECTING LINK
11	13Q-499 BEARINGS
12	13Q-755 SPROCKETS
13	13Q-429 PIN
14	13Q-431 SPRINGS
15	13Q-406 GEARS
16	13Q-1027 SPLIT RING
17	13Q-756 RETAINER RING
18	13Q-419 BUSHING

ITEM NO.	CATALOG NO. & PART NAME
19	13Q-476 SET SCREW
20	13Q-434 PLUG
21	13Q-422 REAR COVER
22	13Q-478 SCREWS
23	13Q-485 LOCK WASHERS
24	13Q-411 HUB
25	13Q-417 SHAFT
26	13Q-764 BEARING
27	13Q-763 LEVER
28	13Q-762 SPACER
29	13Q-761 BEARINGS
30	13Q-1025 ROLL PIN
31	13Q-759 BRACKET
32	13Q-760 COVER
33	13Q-758 SHIFTER PIN
34	13Q-768 SET SCREW
35	13Q-769 LOCK SCREW
36	13Q-767 STUD

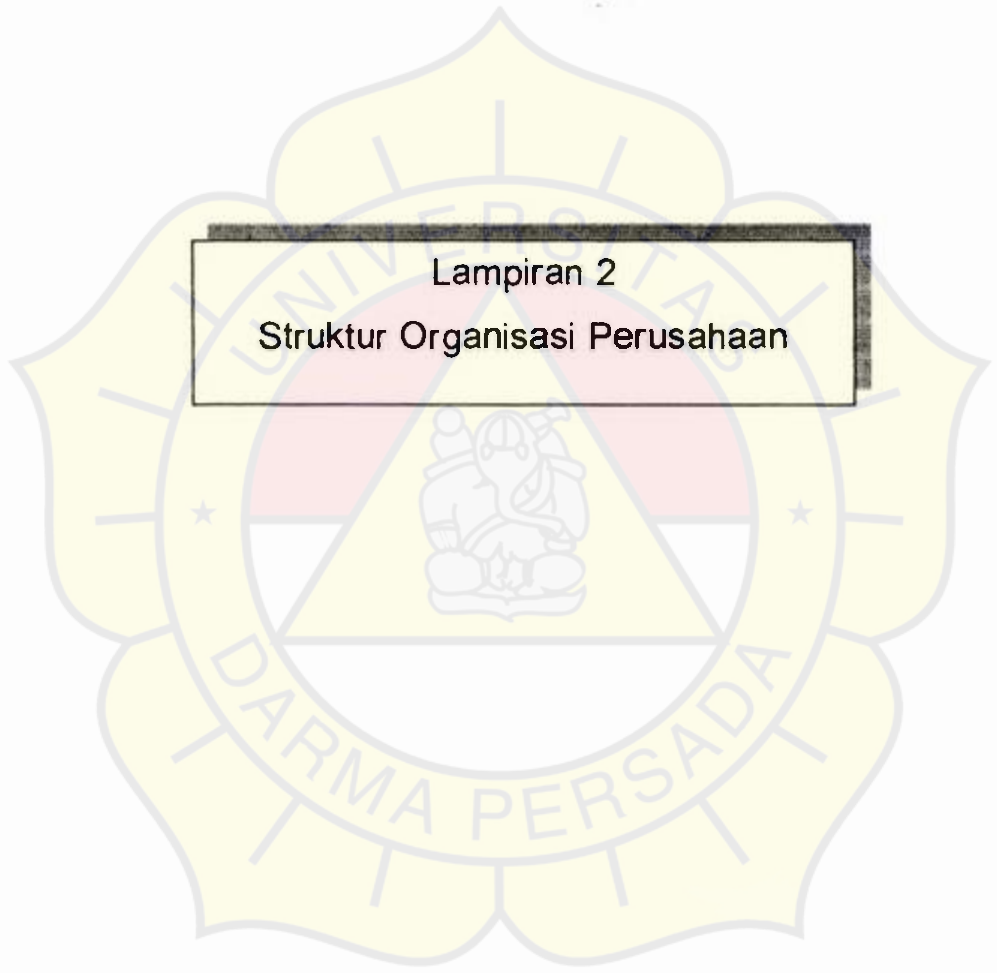
UPPER AND LOWER BRACKET HALVES
ARE FURNISHED ONLY AS AN ASSEMBLY



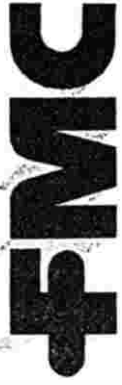
ITEM NO.	CATALOG NO. & PART NAME
1	13Q-400 BRACKET ASSEMBLY
2	13Q-1279 PIN
3	13Q-477 SCREWS
4	13Q-482 LOCK WASHERS
5	13Q-1280 SET SCREWS
6	13Q-459 COVERS
7	13Q-473 SOCKET SCREWS
8	13Q-483 LOCK WASHERS
9	13Q-464 SCREWS
10	13Q-735 LOCK WASHERS
11	13Q-734 SCREWS
12	13Q-732 GUARD (LEFT)
13	13Q-733 GUARD (RIGHT)
14	13Q-740 ELBOW ADAPTERS
15	13Q-1274 RUSHINGS
16	13Q-1275 SLEEVES
17	13Q-259 HANDLE KNOB
18	13Q-432 HANDLE ROD
19	13Q-727 JAM NUTS
20	13Q-726 LOCK WASHERS
21	13Q-725 YOKE
22	13Q-418 COVER
23	13Q-739 SCREWS
24	13Q-1276 PLUNGER CARTRIDGES
25	13Q-1272 SPRINGS
26	13Q-1271 PLUNGERS
27	13Q-411 HUB
28	13Q-725 SCREWS
29	13Q-741 SOCKET SCREWS
30	13Q-771 BLOCKS
31	13Q-770 LEVERS
32	13Q-773 SOCKET SCREWS
33	13Q-730 CAP SCREWS
34	13Q-726 LOCK WASHERS
35	13Q-731 PINS
36	13Q-772 BEARINGS
37	13Q-728 SCREWS
38	13Q-737 BLOCKS
39	13Q-765 SHIFTER SHAFT

ITEM NO.	CATALOG NO. & PART NAME
40	13Q-779 LOCK WASHERS
41	13Q-774 TUBING (SPECIFY LENGTH)
42	13Q-460 BOTTOM PLATE
43	13Q-778 SCREWS
44	13Q-740 ELBOW ADAPTERS
45	13Q-1274 BUSHINGS

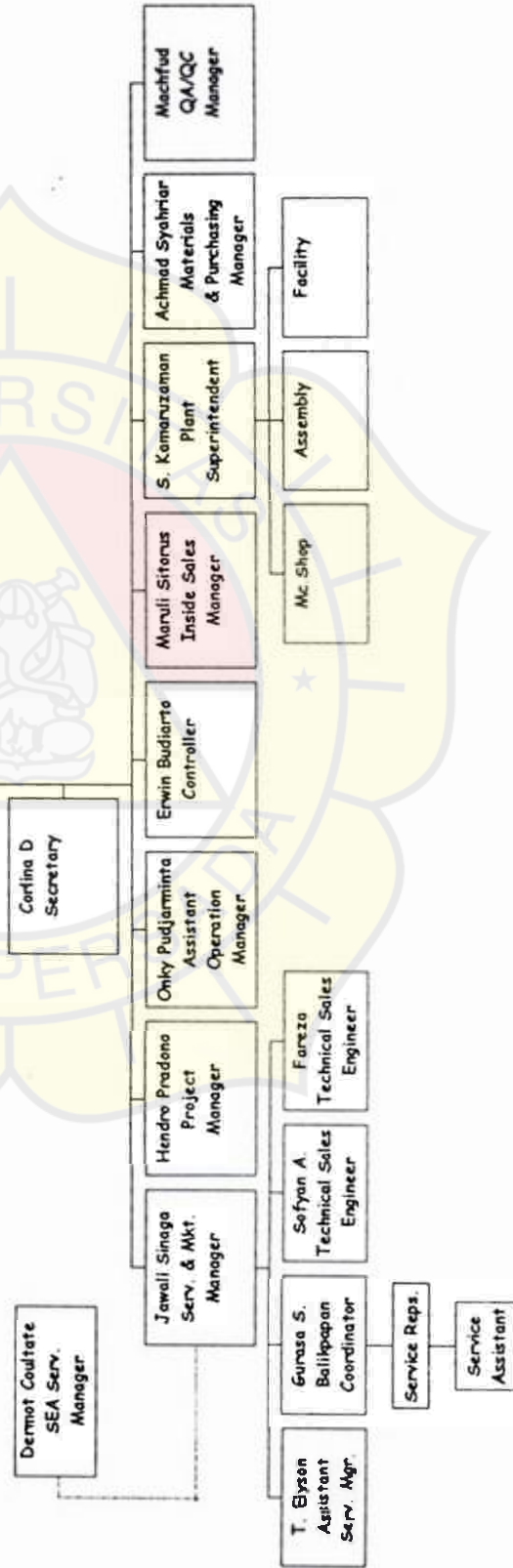
ITEM NO.	CATALOG NO. & PART NAME
46	13Q-1275 SLEEVES
47	13Q-775 STRAIGHT ADAPTERS
48	13Q-430 KEYS
49	13Q-437 SCREWS
50	13Q-504 LOCK WASHERS
51	13Q-464 SOCKET SCREWS


The background features a large, faint watermark of the Universitas Darma Persada logo. The logo is a yellow, multi-lobed emblem with a central shield. The shield is divided into three horizontal sections: a red top section, a white middle section, and a white bottom section. In the center of the shield is a white silhouette of a figure, possibly a deity or a person in traditional attire. The words "UNIVERSITAS" and "DARMA PERSADA" are written in a circular path around the shield. Two small stars are positioned on either side of the shield.

Lampiran 2
Struktur Organisasi Perusahaan



**P.T. FMC SANTANA PETROLEUM
EQUIPMENT INDONESIA
ORGANIZATION CHART**



The logo of Universitas Darma Persada is a large, light yellow emblem with a scalloped border. It features a central shield with a red and white horizontal stripe and a white figure. The text 'UNIVERSITAS' is at the top and 'DARMA PERSADA' is at the bottom of the emblem.

Lampiran 3
Daftar Kerusakan Mesin

Lampiran 3 : Kerusakan Mesin Bubut

Nomor kerusakan	Kerusakan suku cadang	Nomor suku cadang
1	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	IKO bearing	6Q-761
2	SKF bearing	6Q-494
	IKO bearing	6Q-764
	Double nedle bearing	6F-285
	Drive plate	6R-111
3	Double raw bearing	6A-252
	Double nedle bearing	6F-285
	Floating plate	6R-252
4	SKF bearing	6Q-496
	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
	SKF bearing	6Q-495
	Nedle roll bearing	6Q-794
	Drive plate	6R-111
5	SKF ball bearing	6H-590
	Trush ball bearing	6R-578
6	SKF bearing	6Q-495
	SKF bearing	6Q-496
	Double nedle bearing	6F-285
	Double nedle bearing	6F-284
7	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
	Double nedle bearing	6F-285
8	Slide nut	6R-146
	Floating plate	6R-252
	Double nedle bearing	6F-284
9	Double nedle bearing	6F-285
	SKF ball bearing	6H-432
	SKF ball bearing	6H-482
	SKF ball bearing	6H-772
10	Nedle bearing	6G-159
	Slide nut	6R-146
	Floating plate	6R-252
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
11	Slide nut	6R-146
	Floating plate	6R-252
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285

12	IKO bearing	6Q-764
	Nedle roll bearing	6Q-794
	Drive plate	6R-111
13	SKF bearing	6Q-495
	Double raw bearing	6A-252
14	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	SKF ball bearing	6H-432
15	Ball bearing	6A-251
	Trush ball bearing	6R-578
	Nedle bearing	6G-159
	Double nedle bearing	6F-285
	SKF ball bearing	6H-526
16	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	Nedle bearing	6G-159
	SKF ball bearing	6H-432
17	Double nedle bearing	6F-285
	Ball bearing	6A-251
18	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	IKO bearing	6Q-764
19	Nedle roll bearing	6Q-794
	Drive plate	6R-111
	Slide nut	6R-146
20	Floating plate	6R-252
	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
21	Hose crawl hydraulic line	6R-665
	Hose governor valve line	6R-772
	Double nedle bearing	6F-285
22	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	Double nedle bearing	6F-285
23	SKF bearing	6Q-495
	Double nedle bearing	6F-285
24	Timkem cone bearing	6Q-701
	Trush ball bearing	6R-578
25	Double nedle bearing	6F-285
	SKF bearing	6Q-495
	Trush ball bearing	6R-578
26	Double nedle bearing	6F-285
	SKF bearing	6Q-495
	Trush ball bearing	6R-578

27	SKF bearing	6Q-495
	Double needle bearing	6F-285
	Trush ball bearing	6R-578
28	Double needle bearing	6F-285
	Timkem cone bearing	6Q-701
	Timkem cup bearing	6Q-702
29	Trush ball bearing	6R-578
	SKF ball bearing	6H-752
	SKF ball bearing	6H-772
	SKF bearing	6Q-495
30	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	IKO bearing	6Q-761
31	SKF bearing	6Q-494
	IKO bearing	6Q-764
	Double needle bearing	6F-285
	Drive plate	6R-111
32	Double raw bearing	6A-252
	Double needle bearing	6F-285
	Floating plate	6R-252
33	SKF bearing	6Q-496
	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
	SKF bearing	6Q-495
	Needle roll bearing	6Q-794
	Drive plate	6R-111
34	SKF ball bearing	6H-590
	Trush ball bearing	6R-578
35	SKF bearing	6Q-495
	SKF bearing	6Q-496
	Double needle bearing	6F-285
	Double needle bearing	6F-284
36	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
37	Double needle bearing	6F-285
	Slide nut	6R-146
	Floating plate	6R-252
38	Double needle bearing	6F-284
	Double needle bearing	6F-285
	SKF ball bearing	6H-432
	SKF ball bearing	6H-482
39	SKF ball bearing	6H-772
	Needle bearing	6G-159

40	Slide nut	6R-146
	Floating plate	6R-252
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
41	IKO bearing	6Q-764
	Nedle roll bearing	6Q-794
	Drive plate	6R-111
42	SKF bearing	6Q-495
	Double raw bearing	6A-252
43	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	SKF ball bearing	6H-432
44	Ball bearing	6A-251
	Trush ball bearing	6R-578
	Nedle bearing	6G-159
	Double nedle bearing	6F-285
	SKF ball bearing	6H-526
45	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	Nedle bearing	6G-159
	SKF ball bearing	6H-432
46	Double nedle bearing	6F-285
	Ball bearing	6A-251
47	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	IKO bearing	6Q-764
	Nedle roll bearing	6Q-794
48	Drive plate	6R-111
49	Slide nut	6R-146
	Floating plate	6R-252
50	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	Hose crawl hydraulic line	6R-665
51	Hose governor valve line	6R-772
	Double nedle bearing	6F-285
52	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	Double nedle bearing	6F-285
53	SKF bearing	6Q-495

54	Double nedle bearing	6F-285
	Timkem cone bearing	6Q-701
55	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	SKF bearing	6Q-495
	Trush ball bearing	6R-578
56	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	IKO bearing	6Q-761
57	SKF bearing	6Q-494
	IKO bearing	6Q-764
	Double nedle bearing	6F-285
	Drive plate	6R-111
58	Double raw bearing	6A-252
	Double nedle bearing	6F-285
	Floating plate	6R-252
59	SKF bearing	6Q-496
	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
	SKF bearing	6Q-495
	Nedle roll bearing	6Q-794
	Drive plate	6R-111
60	SKF ball bearing	6H-590
	Trush ball bearing	6R-578
61	SKF bearing	6Q-495
	SKF bearing	6Q-496
	Double nedle bearing	6F-285
	Double nedle bearing	6F-284
62	Trush ball bearing	6R-578
	Hose crawl hydraulic line	6R-665
63	Double nedle bearing	6F-285
	Slide nut	6R-146
	Floating plate	6R-252
64	Double nedle bearing	6F-284
	Double nedle bearing	6F-285
	SKF ball bearing	6H-432
	SKF ball bearing	6H-482
65	SKF ball bearing	6H-772
	Nedle bearing	6G-159
66	Slide nut	6R-146
	Floating plate	6R-252
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285

67	IKO bearing	6Q-764
	Nedle roll bearing	6Q-794
	Drive plate	6R-111
68	SKF bearing	6Q-495
	Double raw bearing	6A-252
69	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	SKF ball bearing	6H-432
70	Ball bearing	6A-251
	Trush ball bearing	6R-578
	Nedle bearing	6G-159
	Double nedle bearing	6F-285
	SKF ball bearing	6H-526
71	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	Nedle bearing	6G-159
	SKF ball bearing	6H-432
72	Double nedle bearing	6F-285
	Ball bearing	6A-251
73	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	IKO bearing	6Q-764
	Nedle roll bearing	6Q-794
74	Drive plate	6R-111
75	Slide nut	6R-146
	Floating plate	6R-252
76	SKF bearing	6Q-495
	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	Hose crawl hydraulic line	6R-665
77	Hose governor valve line	6R-772
	Double nedle bearing	6F-285
78	Trush ball bearing	6R-578
	SKF bearing	6Q-495
	Double nedle bearing	6F-285
	Double nedle bearing	6F-285
79	SKF bearing	6Q-495
80	Double nedle bearing	6F-285
	Timkem cone bearing	6Q-701
81	Trush ball bearing	6R-578
	Double nedle bearing	6F-285
	SKF bearing	6Q-495
	Trush ball bearing	6R-578



Lampiran 4

Nilai-nilai X^2 tabel

TABLE IIIB
(Continued)

μ of N								
1.0	1.2	1.4	1.6	1.8	2	3	4	5
0.3679	0.3012	0.2466	0.2019	0.1653	0.1353	0.0498	0.0183	0.0067
0.7358	0.6626	0.5918	0.5249	0.4628	0.4060	0.1991	0.0916	0.0404
0.9197	0.8795	0.8335	0.7834	0.7306	0.6767	0.4232	0.2381	0.1247
0.9810	0.9662	0.9463	0.9212	0.8913	0.8571	0.6472	0.4335	0.2650
0.9963	0.9923	0.9857	0.9763	0.9636	0.9473	0.8153	0.6288	0.4405
0.9994	0.9985	0.9968	0.9940	0.9896	0.9834	0.9161	0.7851	0.6160
0.9999	0.9997	0.9994	0.9987	0.9974	0.9955	0.9665	0.8893	0.7622
1.0000	1.0000	0.9999	0.9997	0.9994	0.9989	0.9881	0.9489	0.8666
		1.0000	1.0000	0.9999	0.9998	0.9962	0.9786	0.9319
				1.0000	1.0000	0.9989	0.9919	0.9682
						0.9997	0.9972	0.9863
						0.9999	0.9991	0.9945
						1.0000	0.9997	0.9980
							0.9999	0.9993
							1.0000	0.9998
								0.9999
								1.0000

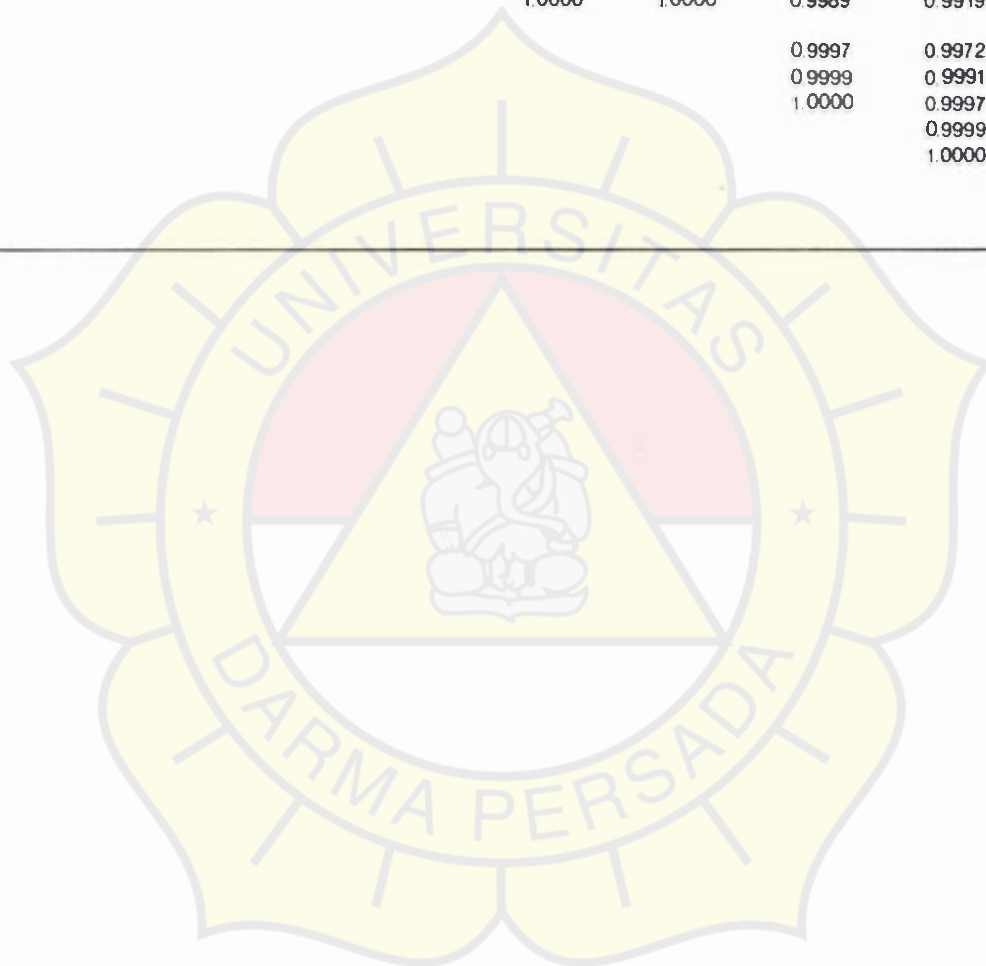
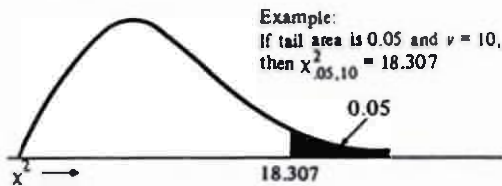


TABLE IV



VALUES OF χ^2 FOR SPECIFIED RIGHT-TAIL AREAS

Degrees of freedom ν	Right-tail area				
	0.20	0.10	0.05	0.02	0.01
1	1.642	2.706	3.841	5.412	6.635
2	3.219	4.605	5.991	7.824	9.210
3	4.642	6.251	7.815	9.837	11.345
4	5.989	7.779	9.488	11.668	13.277
5	7.289	9.236	11.070	13.388	15.086
6	8.558	10.645	12.592	15.033	16.812
7	9.803	12.017	14.067	16.622	18.475
8	11.030	13.362	15.507	18.168	20.090
9	12.242	14.684	16.919	19.679	21.666
10	13.442	15.987	18.307	21.161	23.209
11	14.631	17.275	19.675	22.618	24.725
12	15.812	18.549	21.026	24.054	26.217
13	16.985	19.812	22.362	25.472	27.688
14	18.151	21.064	23.686	26.873	29.141
15	19.311	22.307	24.996	28.259	30.578
16	20.465	23.542	26.296	29.633	32.000
17	21.615	24.769	27.587	30.995	33.409
18	22.760	25.989	28.869	32.346	34.805
19	23.900	27.204	30.144	33.687	36.191
20	25.038	28.412	31.410	35.020	37.566
21	26.171	29.615	32.671	36.343	38.932
22	27.301	30.813	33.924	37.659	40.289
23	28.429	32.007	35.172	38.968	41.638
24	29.553	33.196	36.415	40.270	42.980
25	30.675	34.382	37.652	41.566	44.314
26	31.795	35.563	38.885	42.856	45.642
27	32.912	36.741	40.113	44.140	46.963
28	34.027	37.916	41.337	45.419	48.278
29	35.139	39.087	42.557	46.693	49.588
30	36.250	40.256	43.773	47.962	50.892

Source: Taken from Table IV of Fisher & Yates, *Statistical Tables for Biological, Agricultural and Medical Research*, published by Longman Group, Ltd., London (1974, 6th edition) (Previously published by Oliver & Boyd, Ltd., Edinburgh) By permission of the authors and publishers.

TABLE V

Example:
If $z = 1.96$,
 $P(0 < z) = 0.975$

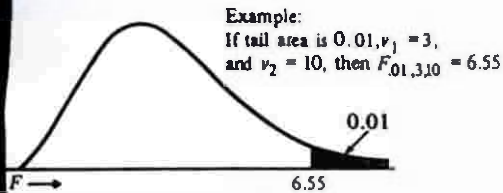
AREAS UNDER

z	0
0.0	0.1
0.1	0.1
0.2	0.1
0.3	0.1
0.4	0.1
0.5	0.1
0.6	0.2
0.7	0.2
0.8	0.2
0.9	0.3
1.0	0.3
1.1	0.3
1.2	0.3
1.3	0.4
1.4	0.4
1.5	0.4
1.6	0.4
1.7	0.4
1.8	0.4
1.9	0.4
2.0	0.4
2.1	0.4
2.2	0.4
2.3	0.4
2.4	0.4
2.5	0.4
2.6	0.4
2.7	0.4
2.8	0.4
2.9	0.4
3.0	0.4



Lampiran 5
Nilai-nilai F_{Tabel}

TABLE VIII



F VALUES FOR RIGHT-TAIL AREA OF 0.01

	Degrees of freedom for numerator									
	1	2	3	4	5	6	7	8	9	10
1	4052	5000	5403	5625	5764	5859	5928	5982	6022	6056
2	98.5	99.0	99.2	99.2	99.3	99.3	99.4	99.4	99.4	99.4
3	34.1	30.8	29.5	28.7	28.2	27.9	27.7	27.5	27.3	27.2
4	21.2	18.0	16.7	16.0	15.5	15.2	15.0	14.8	14.7	14.5
5	16.3	13.3	12.1	11.4	11.0	10.7	10.5	10.3	10.2	10.1
6	13.7	10.9	9.78	9.15	8.75	8.47	8.26	8.10	7.98	7.87
7	12.2	9.55	8.45	7.85	7.46	7.19	6.99	6.84	6.72	6.62
8	11.3	8.65	7.59	7.01	6.63	6.37	6.18	6.03	5.91	5.81
9	10.6	8.02	6.99	6.42	6.06	5.80	5.61	5.47	5.35	5.26
10	10.0	7.56	6.55	5.99	5.64	5.39	5.20	5.06	4.94	4.85
11	9.65	7.21	6.22	5.67	5.32	5.07	4.89	4.74	4.63	4.54
12	9.33	6.93	5.95	5.41	5.06	4.82	4.64	4.50	4.39	4.30
13	9.07	6.70	5.74	5.21	4.86	4.62	4.44	4.30	4.19	4.10
14	8.86	6.51	5.56	5.04	4.70	4.46	4.28	4.14	4.03	3.94
15	8.68	6.36	5.42	4.89	4.56	4.32	4.14	4.00	3.89	3.80
16	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69
17	8.40	6.11	5.19	4.67	4.34	4.10	3.93	3.79	3.68	3.59
18	8.29	6.01	5.09	4.58	4.25	4.01	3.84	3.71	3.60	3.51
19	8.19	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43
20	8.10	5.85	4.94	4.43	4.10	3.87	3.70	3.56	3.46	3.37
21	8.02	5.78	4.87	4.37	4.04	3.81	3.64	3.51	3.40	3.31
22	7.95	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26
23	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21
24	7.82	5.61	4.72	4.22	3.90	3.67	3.50	3.36	3.26	3.17
25	7.77	5.57	4.68	4.18	3.86	3.63	3.46	3.32	3.22	3.13
30	7.56	5.39	4.51	4.02	3.70	3.47	3.30	3.17	3.07	2.98
40	7.31	5.18	4.31	3.83	3.51	3.29	3.12	2.99	2.89	2.80
60	7.08	4.98	4.13	3.65	3.34	3.12	2.95	2.82	2.72	2.63
120	6.85	4.79	3.95	3.48	3.17	2.96	2.79	2.66	2.56	2.47
∞	6.63	4.61	3.78	3.32	3.02	2.80	2.64	2.51	2.41	2.32

Source: Extracted from M. Merrington and C. M. Thompson, "Tables of Percentage Points of the Inverted Beta (F) Distribution," *Biometrika*, vol. 33 (1943). Reprinted by permission of the *Biometrika* trustees.

Degrees of freedom for denominator

12
∞

TABLE VIII
 (Continued)
F VALUES FOR RIGHT-TAIL AREA OF 0.05

		Degrees of freedom for numerator									
		1	2	3	4	5	6	7	8	9	10
Degrees of freedom for denominator	1	161	200	216	225	230	234	237	239	241	242
	2	18.5	19.0	19.2	19.2	19.3	19.3	19.4	19.4	19.4	19.4
	3	10.1	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79
	4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96
	5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74
	6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06
	7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64
	8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35
	9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14
	10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98
	11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85
	12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75
	13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67
	14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60
	15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54
	16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49
	17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45
	18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41
	19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38
	20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35
	21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32
	22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30
	23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27
	24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25
	25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	