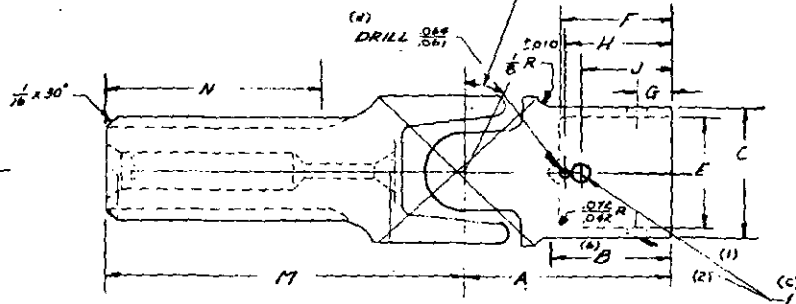
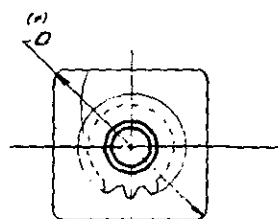


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FED. SUP CLASS.
30/0

DIMENSIONS-ROUND HUB

M3 PART NO.	FINI	NOM SIZE	A	B	C DIA 1.000 -.002	E SWING DIA	F DIA 1.004 -.001	G	H	J	L PILOT HOLE DRILL
MS24314-12		1/2	1.313	1/8	1.45	1/8	.625	1/8	.219	.531	3/32
MS24314-16		1	1.750	1/8	.995	1/8	.012	.261	.656	.57	5/32
MS24314-20		1 1/2	1.938	1/8	1.245	1/8	1.062	.312	1.005	.680	3/8
MS24314-24		1 1/2	2.312	1/8	1.495	2/8	1.250	.344	1.129	.781	3/8
MS24314-28		1 1/2	2.563	1/8	1.745	2/8	1.375	.531	1.555	.969	3/8
MS24314-32		2	2.813	1/8	1.995	2/8	1.625	.656	1.773	1.094	3/8

DIMENSIONS SPLINE YOKES		
NOM SIZE	M ±.010	N MIN
1/2	2.875	1/8
1	3.125	1 1/2
1 1/2	3.312	2
1 1/2	3.750	2 1/2
1 1/2	4.438	2 1/2
2	4.625	2 1/2

**A CANCELLED AFTER
15 AUG 1977 NO
SUPERSEDING STANDARD**

STATIC TORQUE MAXIMUM LB. IN.	WIGHT JOINT TOTAL MAX LBS
1500	.20
3000	.45
7500	.80
11000	1.25
15000	2.00
20 000	3.00

EXTERNAL INVOLUTE SPLINE DATA (1/16 32) DIAMETRAL PITCH													ACC PITCH
NOM JOINT SIZE	NO. TEETH	PITCH DIA REF	BASE CIRCLE DIA REF	FILLET ROOT			TIF DIA MAX	MEASUREMENT OVER PINS		TOOTH THICKNESS		MEAS. PIN DIA	ERROR BETWEEN ANY TWO TEETH
				OUTSIDE DIA +.0000 -.0050	ROOT DIA +.0000 -.0112	FILLET RAD MIN		MAX	MIN	MAX EFFECTIVE	MIN DIM5		
1/2	11	.6875	.5954	.7500	.5625		.6250	.6395	.6574	.0977	.0946	.1200	.0022
1	13	.8125	.7036	.8750	.6875	.019	.7500	.9866	.9844	.0977	.0946	.1200	.0022
1 1/2	15	.9375	.8119	1.0000	.8125	.018	.8750	1.1131	1.1109	.0977	.0946	.1200	.0023
1 1/2	17	1.0625	.9202	1.1250	.9375	.018	1.0000	1.2392	1.2370	.0977	.0946	.1200	.0025
1 1/2	19	1.1875	1.0284	1.2500	1.0625	.017	1.1250	1.3652	1.3629	.0977	.0946	.1200	.0026
2	21	1.3125	1.1367	1.3750	1.1875	.017	1.2500	1.4909	1.4886	.0977	.0946	.1200	.0027

MAX INVOLUTE PROFILE ERROR .0005 IN. TOOTH SURFACE PROFILE 100
MAX LEAD ERROR .0003 IN. MAX OUT OF ROUNDNESS .0010 IN.

(1) FEDERAL ITEM IDENTIFICATION NO.

(2) DIMENSION IS LENGTH OF STRAIGHT CYLINDRICAL SECTION.

(3) CENTER LINE OF PILOT HOLE (1) SHALL LIE IN A DIRECTION PARALLEL TO THE PIVOT CENTER LINE OF THE YOKE WITHIN 0°30'.

(4) CENTER LINE OF PILOT HOLE (2) SHALL LIE IN A DIRECTION PERPENDICULAR TO THE PIVOT CENTER LINE OF THE YOKE WITHIN 0°30'.

(5) CENTER LINE OF INSPECTION HOLE SHALL LIE IN A DIRECTION PARALLEL TO THE PIVOT CENTER LINE OF THE YOKE WITHIN 0°30'.

(6) PRESSURE ANGLE 30°; ADDENDUM (.4451) ±.0313; DEDENDUM ±.0595; CIRCULAR PITCH = .1965.

(7) DIAMETER TYPICAL FOR BOTH YOKES.

MATERIAL: SEE PROCUREMENT SPECIFICATION.
FINISH: SEE PROCUREMENT SPECIFICATION.
REMOVE ALL BURRS & SHARP EDGES.

ALL DIMENSIONS TO BE MET AFTER PLATING.
DIMENSIONS IN INCHES, UNLESS OTHERWISE SPECIFIED. TOLERANCES: FRACTIONS ± 1/64, DECIMALS ± .005.
THE TWO YOKES OF THE ASSEMBLED UNIVERSAL JOINT SHALL BE CONCENTRIC TO EACH OTHER WITHIN .015 TIR.
ADD-N BEFORE DASH NO. FOR JOINTS WITHOUT PREDRILLED PILOT HOLES.

EXAMPLE OF PART NO.: MS24314-12-34 IN NOMINAL HUB WITH PREDRILLED PILOT HOLES;
MS24314-12-34 IN NOMINAL HUB WITHOUT PREDRILLED PILOT HOLES.

ALL MACHINED SURFACES MUST BE SMOOTH 125 MAX AND FREE FROM TOOL MARKS.

"THIS DOCUMENT HAS BEEN PROMULGATED BY THE DEPARTMENT OF DEFENSE

AS THE MILITARY STANDARD TO LIGHT THE SELECTION OF THE ITEM, PRODUCT

OR DESIGN COVERED HEREIN IN ENGINEERING, DESIGN AND PROCUREMENT.

THIS STANDARD SHALL BECOME EFFECTIVE NOT LATER THAN 90 DAYS AFTER

THE LATEST DATE OF APPROVAL SHOWN."

A DENOTES CHANGES

CUSTODIANS
ARMY-DRD
Navy - BuAer
Air Force

OTHER INT.
A - EF
N - ON

MILITARY STANDARD

UNIVERSAL JOINT, ANTI-FRICTION BEARING, EXTERNAL SPLINE

MS24314

PROCUREMENT SPECIFICATION
MIL-U-3963

SUPERSEDES:

SHEET 1 OF 1

DD FORM 672-1
1 OCT 62

APPROVED 6 FEBRUARY 1956 REVISED 15 AUG 1977